Undergraduate Calendar

Concordia University

1975/76

Incorporating
Sir George Williams University and
Loyola of Montreal

1975

JANUARY

S	M	T	W	T	F	S
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FEBRUARY

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JUNE

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1976

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FEBRUARY

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APRIL

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JULY

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AUGUST

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SEPTEMBER

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NOVEMBER

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DECEMBER

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Undergraduate Programmes 1975-76

Concordia University

Sir George Williams Campus
1455 de Maisonneuve West,
Montreal, Quebec H3G 1M8

Loyola Campus
7141 Sherbrooke Street West
Montreal, Quebec H4B 1R6

The 1975-76 Concordia University Undergraduate Calendar is the first published by the university since its creation in August of 1974. This publication supercedes the following calendars previously issued by the founding institutions Sir George Williams University and Loyola of Montreal.

1. Sir George Williams University, Undergraduate Calendar
2. Loyola of Montreal, Undergraduate Calendar
3. The Loyola of Montreal, Evening Division Calendar.

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This calendar has been prepared months in advance of the academic year 1975-1976 and information contained herein is subject to change. For information concerning class schedules, contact the Records Offices; Loyola Campus, Room 215, Central Building, 7141 Sherbrooke Street West; Sir George Williams Campus, Room 107, Norris Building, 1435 Drummond Street. For information concerning graduate programmes contact the Graduate Studies Office, Room S205, 2145 Mackay Street.

1 Concordia University

The University Liaison Office coordinates all information services for potential students. The university calendar may be requested through this Office by individuals or groups.

Sir George Williams Campus
Loyola Campus
Phone: 879-4233
482-0320 Local 264

Concordia University

Concordia University, established in August 1974, joins together Sir George Williams University and Loyola of Montreal. Its name reflects the motto of the City of Montreal "Concordia salus". The University has two campuses: the Sir George Williams Campus, grouped around the Henry F. Hall Building at 1455 de Maisonneuve Boulevard West, in the heart of Montreal, and the Loyola campus in the west end, 7141 Sherbrooke Street West — a concrete and a green campus.

The University offers undergraduate degrees in six Faculties. The Faculty of Engineering, the Faculty of Commerce and Administration and the Faculty of Fine Arts give courses on both campuses. The other Faculties are: The Sir George Williams Faculty of Arts; the Sir George Williams Faculty of Science; the Loyola Faculty of Arts and Science.

The Master's degrees awarded by Concordia University are: Master of Arts; Master of Fine Arts; Master of Science; Master of Engineering; Master of Business Administration; Master of Computer Science; Master in the Teaching of Mathematics. Doctorates are awarded in: Chemistry; Economics; Engineering; History; Humanities; Physics; Religion. The University also offers postgraduate diploma programmes in: Art Education; Communication Arts; Early Childhood Education; Institutional Administration; Instructional Technology; the Teaching of Mathematics.

Enrolment in the 1974-75 academic year was:

full-time undergraduate students	8,900
part-time undergraduate students	10,400
graduate students	2,250
other, non-degree students	5,150

In addition to the programmes described in this calendar and the graduate studies calendar, the University offers a wide range of summer programmes on both campuses.

The Campuses of Concordia

Libraries

The Sir George Williams Campus library collection contains some 500,000 books, 100,000 periodicals and government publications and 200,000 items in microform and audio-visual materials, The collection is expanding.

The main library containing the bulk of the collection is located in the Norris Building. The Science and Engineering library is situated on the 10th floor of the Hall Building.

Loyola Campus libraries provide resources and services for that campus' students and teaching faculty. The resources include approximately 210,000 volumes; selected Canadian, Quebec and foreign government documents; films and slides, microfilm, and subscriptions to about 3,500 serial publications.

Laboratories

The university has 100 laboratories on both campuses with modern equipment for teaching and research in Biology, Chemistry, Physics, Engineering, Statistics, Psychology, Geography and Languages.

The laboratories for Communication Arts on the Loyola Campus contain a TV studio, projection room, multi-media room, film editing facilities and a complete photography studio.

Art Galleries

There are three art galleries on the mezzanine floor of the Henry F. Hall Building as well as open display areas. The galleries house an extensive collection of Canadian art including paintings, drawings, graphics and sculpture. There is a continuous programme of outside exhibitions and shows by students and faculty members. The galleries are also used for concerts, poetry readings, guest lectures and other cultural events.

Theatre and Studios

The Douglass Burns Clarke Theatre, located in the Hall Building of the Sir George Williams Campus is the home of the Theatre Arts Section. Student and other productions are given regularly through the academic year.

Studios for work in Fine and Applied Art are also located in the Hall Building.

Theatres on the Loyola Campus include the F. C. Smith Auditorium and the small arena type "match box" theatre, *The Chameleon*.

Audio Visual Facilities

Audio-visual facilities under the control of the Centre for Instructional Technology on the Sir George Williams Campus include a professional television studio, a closed circuit television and distribution network serving all class areas of the Hall and Norris Buildings and learning laboratories with carrel study facilities for use with media presentations.

Audio-visual facilities are currently being installed throughout the Loyola Campus as well.

Computer Centre

The main installation in the Computer Centre is a Control Data Corporation 6200 digital computer, modern, time-sharing equipment on the Sir George Williams Campus. The centre itself is located outside the university.

A computer installation on the Loyola campus as well provides a range of facilities to meet the requirements of students, faculty and administration located there.

11 Academic Calendar

The Academic Calendar is subject to change without notice. Effort will be made to publicize revisions.

11.1 Academic Calendar

1975

MARCH	**SATURDAY, MARCH 1**	Last day for applications Day Division (1975-76)	Concordia
	MONDAY, MARCH 3	Course selection (Pre-Registration 1975-76) begins	Sir George Williams Campus
MAY	**THURSDAY, MAY 15**	Special Examinations for Winter Session 1974-75 Evening Division	Loyola Campus
	FRIDAY, MAY 16	Last day for applications Summer Session 1975	Concordia
	TUESDAY, MAY 27	Registration begins	Concordia
	FRIDAY, MAY 30	Registration ends	Concordia
JUNE	**MONDAY, JUNE 2**	Classes begin — Evening Division Summer Session	Concordia
		Evening course change period begins	Concordia
	T.B.A.	Spring Convocation	Concordia
	FRIDAY, JUNE 6 (4:30 P.M.)	Evening course change period ends	Sir George Williams Campus
	THURSDAY, JUNE 12	Last day for supplemental examination applications	Sir George Williams Campus
	THURSDAY, JUNE 19	Evening course change period ends	Loyola Campus
	FRIDAY, JUNE 20	Last day for applications for supplemental and special examinations — Day Winter Session	Loyola Campus
	MONDAY, JUNE 30	Last day for submission of Pre-registration forms	Sir George Williams Campus
JULY	**WEDNESDAY, JULY 2**	Classes begin — Day Summer Session	Concordia
		Last day for academic withdrawal — Evening Summer Session	Concordia
	FRIDAY, JULY 18	Last day for academic withdrawal — Day Summer Session	Loyola Campus
	WEDNESDAY, JULY 23	Special and supplemental Examinations begin — Winter Session 1974-75	Concordia
	THURSDAY, JULY 31	Classes end — Evening Summer Session	Sir George Williams Campus

AUGUST	**SATURDAY, AUGUST 2**	Supplemental and special examinations end	Concordia
	MONDAY, AUGUST 4	Examinations begin — Evening Summer Session	Sir George Williams Campus
	FRIDAY, AUGUST 8	Classes end — Evening and Day Summer Session	Loyola Campus
	SATURDAY, AUGUST 9	Examinations end — Evening Summer Session	Sir George Williams Campus
	TUESDAY, AUGUST 12	Classes end — Day Summer Session	Sir George Williams Campus
	FRIDAY, AUGUST 15	Last day for applications Evening Division (1975-76)	Sir George Williams Campus
	MONDAY, AUGUST 18	Registration for enrolled students begins	Sir George Williams Campus
	THURSDAY, AUGUST 21	Registration for enrolled students ends	Sir George Williams Campus
		Supplemental examinations Winter Session 1973-74 and Special examinations for Summer 1975 (Evening Division only)	Loyola Campus
	FRIDAY, AUGUST 22	Last day for applications Evening Division (1975-76)	Loyola Campus
	MONDAY, AUGUST 25	General Registration begins (Specific dates to be published in the timetable)	Concordia
SEPTEMBER	**FRIDAY, SEPTEMBER 5**	General registration ends	Concordia
	MONDAY, SEPTEMBER 8	Classes begin — Day and Evening	Concordia
		Course change period begins	Concordia
	FRIDAY, SEPTEMBER 19 (4:30 P.M.)	Course change period ends	Concordia
OCTOBER	**FRIDAY, OCTOBER 31**	Last day for academic withdrawal from first term courses	Concordia
NOVEMBER	**MONDAY, NOVEMBER 3**	Last day for applications — supplemental examinations for Summer Session	Concordia
	FRIDAY, NOVEMBER 14	Last day for applications — January entry	Concordia
	T.B.A. Nov 22/75	Fall Convocation	Concordia
	SATURDAY, NOVEMBER 29	Supplemental examinations — Summer Session	Concordia

DECEMBER	**SATURDAY, DECEMBER 6**	Last day of classes — first term	Concordia
		Examination period begins	Concordia
	SATURDAY, DECEMBER 20	Last day for examinations prior to holiday recess	Concordia
	T.B.A.	Registration for January entry	Concordia
1976			
JANUARY	**SATURDAY, JANUARY 3**	Last day for examinations	Concordia
	MONDAY, JANUARY 5	Classes begin — second term	Concordia
		Course change period begins for courses offered only in the second term	Concordia
	FRIDAY, JANUARY 16	Course change period ends	Concordia
FEBRUARY	**MONDAY, FEBRUARY 16**	Seminar Day — No classes	Concordia
	TUESDAY, FEBRUARY 17	Seminar Day — No classes	Concordia
	FRIDAY, FEBRUARY 27	Last day for academic withdrawal from full courses and second term courses	Concordia
MARCH	**MONDAY, MARCH 8**	Last day for applications — first term supplemental examinations — graduating students only	Concordia
	SATURDAY, MARCH 20	First term supplemental examinations — graduating students	Concordia
APRIL	**TUESDAY, APRIL 6**	Last day of classes	Concordia
	WEDNESDAY, APRIL 7	Final examinations begin	Concordia
MAY	**SATURDAY, MAY 1**	Final examinations end (subject to change)	Concordia
JUNE	**T.B.A.**	Spring Convocation	Concordia

11.2 Tentative Examination Timetable, Sir George Williams Campus

1. Each lecture block has been assigned an alphabetical code.

2. All examinations in one time block will normally be written at the time assigned. However, some courses with multi sections may be removed and placed in one of the common blocks while others may be removed for academic or administrative reasons and placed in a special time block.

3. Students are reminded that it is the instructor's prerogative to establish his method of course evaluation; therefore, it is quite probable that many courses will not hold official examinations.

4. It is recommended that students avoid making other commitments during the examination periods until the official timetable is posted one month prior to the beginning of examinations.

CODING

MWF 8:45-9:35 a.m.	A
MWF 9:50-10:40	B
MWF 10:55-11:45	C
MWF 12:00-12:50 p.m.	D
MWF 1:05-1:55	E
MW 2:10-3:25	F
MW 3:45-5:00	G
TT 8:45-10:00 a.m.	H
TT 10:15-11:30	I
TT 11:45-1:00 p.m.	J
TT 1:15-2:30	K
TT 2:45-4:00	L
TT 4:15-5:30	M
Mon 6:15-8:10 p.m.	N
Tue 6:15-8:10	O
Wed 6:15-8:10	P
Thu 6:15-8:10	Q
Fri 6:15-8:10	R
Mon 8:30-10:25	S
Tue 8:30-10:25	T
Wed 8:30-10:25	U
Thu 8:30-10:25	V
Fri 8:30-10:25	W
Sat 8:45-10:40 a.m.	X
Sat 11:00-12:50 p.m.	Y

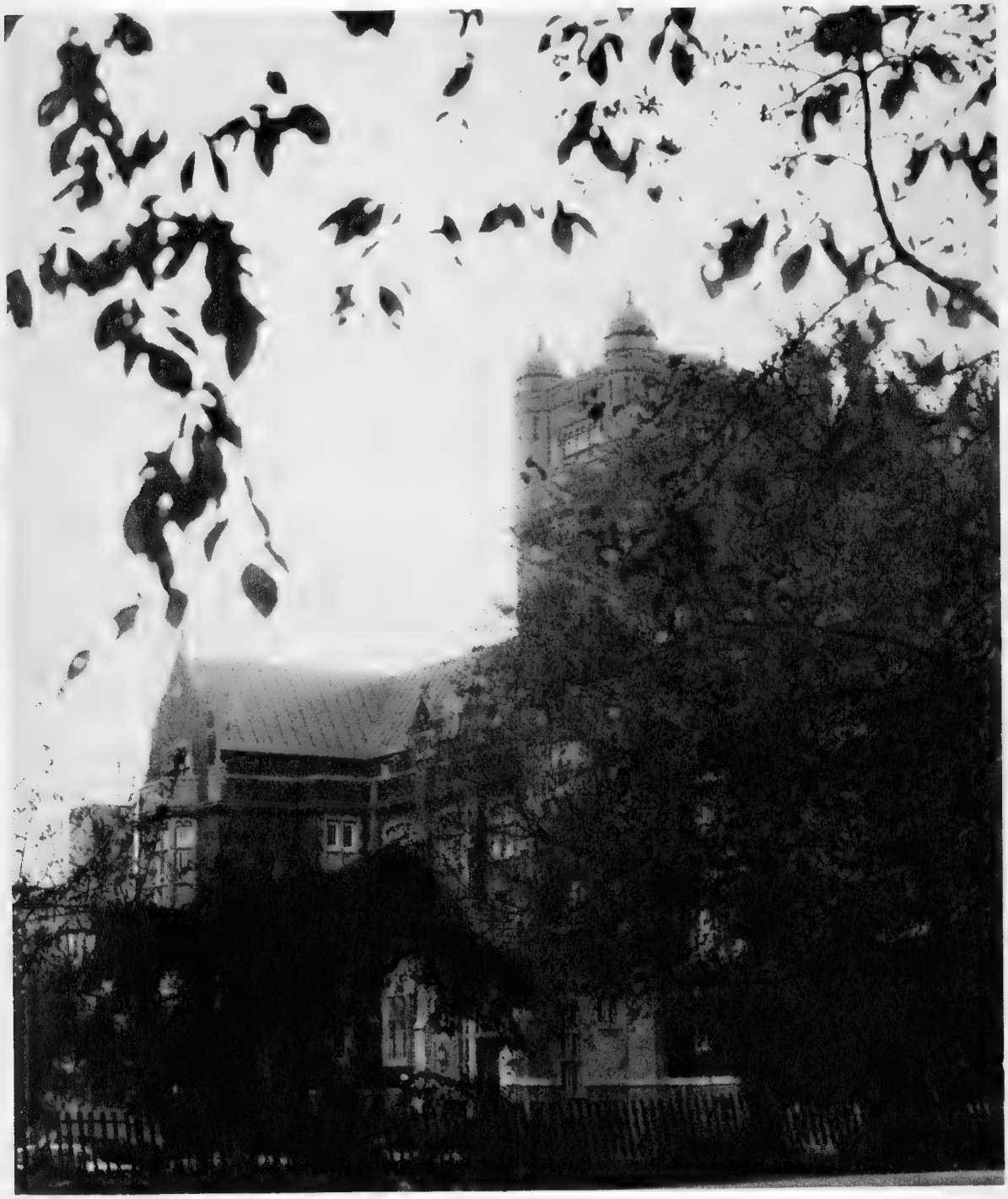
CHRISTMAS EXAMINATION 1975

	Morning	Afternoon	Evening
Sat Dec 6	Common	Common	
Mon Dec 8	Special	A	N
Tue Dec 9	I	E	O
Wed Dec 10	Special	B	P
Thu Dec 11	Special	J	Q
Fri Dec 12	C	G	R
Sat Dec 13	Common-X	Common-Y	
Mon Dec 15	Special	D	S
Tue Dec 16	Special	K	T
Wed Dec 17	F	M	U
Thu Dec 18	Special	L	V
Fri Dec 19	Special	H	W
Sat Dec 20	Common	Common	
Sat Jan 3	Common	Common	

APRIL EXAMINATIONS 1976

	Morning	Afternoon	Evening
Wed Apr 7			P
Thu Apr 8	Special	E	Q
Fri Apr 9	M	J	R
Sat Apr 10	Common-X	Common-Y	
Mon Apr 12	Special	A	N
Tue Apr 13	K	H	O
Wed Apr 14	B	—	—
Thu Apr 15	Holiday	Holiday	Holiday
Fri Apr 16	Holiday	Holiday	Holiday
Sat Apr 17	Holiday	Holiday	Holiday
Mon Apr 19	Holiday	Holiday	Holiday
Tue Apr 20	Special	Special	
Wed Apr 21	Holiday	Holiday	Holiday
Thu Apr 22	Holiday	Holiday	Holiday
Fri Apr 23	Special	D	W
Sat Apr 24	Common	Common	
Mon Apr 26	C	F	S
Tue Apr 27	L	I	T
Wed Apr 28	Special	G	U
Thu Apr 29	Special	Special	V
Fri Apr 30	Special	Special	Common
Sat May 1	Common	Common	

12 Governors, Senate, Councils, Faculty, Staff



12.1 Governors, Senate, Councils, Faculty, Staff

12.1.1 BOARD OF GOVERNORS

Mr. H. G. Hemens, Q.C., Chancellor
Mr. C. A. Duff, Chairman
Mr. C. S. Malone, Vice-Chairman
Mr. R. P. Duder, Secretary

Prof. J. Bordan
Mrs. M. Csatary-Kontra
Prof. A. Dickie
Rev. S. Drummond, S.J.
Mr. J. Freedman
Dr. P. Gallagher
Rev. A. Graham, S.J.
Mr. R. L. Grassby
Dr. H. P. Habib
Mr. R. Hahn
Mr. J. R. Hannan
Mr. P. Kontakos
Mr. T. D. Lande
Mr. E. A. Lemieux
Mr. W. Loucks
Prof. T. Maag
Mr. P. M. McEntyre
Dr. J. McGraw
Dr. J. T. McIlhone
Mr. D. W. McNaughton
Dr. J. W. O'Brien
Rev. R. E. O'Connor, S. J.
Prof. O. A. Pekau
Dr. J. Smola
Mr. J. W. Tait

12.1.2 CONCORDIA SENATE

John O'Brien, Chairman
John Noonan, Secretary

Geoffrey Adams
Roger Angel
Andrew Berczi
Lawrence Bessner
Jitendra Bhatnagar
Jack Bordan
Russel Breen
Gunther Brink
Mel Burtt
Victor Byers
J. Clair Callaghan
Ian L. Campbell
Helen Ann Cave
June Chaikelson
Charles Davis
John Doyle
Frank Duffy
Ferne Elliot
Hildegard Enesco
Edward Enos
Stanley French
Carl Goldman
Aloysius Graham
Josef Hofbeck
Horst Hutter
John James
Irwin Katsof
James Lindsay
David McDougall
Sean McEvenue
Hugh McQueen
Joseph Mouledoux
Zoltan Popp
Calvin Potter
Brian Sher
Harvey Shulman
Ron Smith
Roger Verschingel
Robert Wall
Richard Ward
James Whitelaw
Bob Wong
George Xistris
Raymond Zienius
Linda Zlatkin

12.1.3 COUNCIL OF THE LOYOLA FACULTY OF ARTS AND SCIENCE

Dean Russell Breen, Chairman
Lionel Sanders, Secretary

Shafiq Alvi
Alfred Audet
Lawrence Bessner
Donald Boisvert
Jack Bordan
Gilles Charpentier
Gerald Chasin
Edward Chown
Bipin Desai
Kuldip Dhindsa
Mark Doughty
Stephen Dubas
Helmut Famira
Ross Francoeur
Aloysius Graham
Gerry Gross
Josef Hofbeck
Michael Hogben
Irwin Katsof
Andrew Kawczak
Julius Krantzberg
Gustave Labbé
Robert Lambert
Julie MacDonald
David McDougall
Sean McEvenue
Diane McPeak
Nancy Morrey
John E. O'Brien
John W. O'Brien
Edgar O'Hara
Robert Pallen
Douglas Potvin
Eileen Preston
Everett Price
Joseph Princz
William Sellers
Bruce Smart
Joseph Soric
Robert Tittler
Ken Torrens
Anthony Traynor
Terry Walsh
Katherine Waters
Eric Weisbloom

12.1.4 COUNCIL OF THE SIR GEORGE WILLIAMS FACULTY OF ARTS

Dean I. L. Campbell, Chairman
Brian Slack, Secretary

Olga Anderson
Roger Angel
Muriel Armstrong
Roslyn Belkin
Jordan Berson
Joti Bhatnagar
Sandra Boivin
Michael Brian
Mervin Butovsky
Laura Campbell
June Chaikelson
Graeme Chalmers

David Charlton
Edwy Cooke
Vittorio Corbo
William Currie
Charles Davis
Michel Despland
Richard Diubaldo
Nelson Fish
David Frost
Thomas Gray
Horst Hutter
Ellen James
Albert Jordan
Annamaria Ketter
Frederick Krantz
Dallas Laskey
Abel Lewis
Beth McAuley
Dick McDonald
David McDougall
Gerald Mahoney
Michael Marsden
Patricia Morley
Joseph Mouledoux
John Noonan
John O'Brien
Mona Osborne
Guy Ouellet
Jean Schneider
Harvey Shulman
Morton Stelcner
Jane Stewart
Franklin Swart
Gilbert Taggart
Murry Tkatch
Robert Wall

12.1.5 COUNCIL OF THE FACULTY OF COMMERCE AND ADMINISTRATION

Dean Andrew Berczi, Chairman
Alan Riding, Secretary
Shafiq Alvi
Clarence Bayne
Jack Bordan
Lawrence J. Boyle
Beverley Brucha
Pierre Brunet
Bonnie Cameron
Soo-Ching Chan
G. Robert Curnew
Henry Dauderis
Kailash C. Dhawan
Adam Dickie
Frank Dougherty
G. Bruce English
James G. Finnie
Jay E. Flynn
Gary Johns
Lawrence Kryzanowski
Thomas Kubicek
Mark Lattoni
Paul Leblanc
David A. MacDonald
Bruce Mallen
Harvey Mann
Brian Markland
John W. O'Brien
Giorgio Pederzoli
Calvin C. Potter
Stephen Robbins
Alexander Sanders
Morton Stelcner
Thomas Swift
Ulrike Todorovic
Paul Vetter
Andrejs Vitols
Roland O. Wills
Four Evening Students to be appointed

12.1.6 COUNCIL OF THE FACULTY OF ENGINEERING

Dean J. Clair Callaghan, Chairman
J. Charles Giguere, Secretary
M. Agostino
Kenneth D. Adams
B. B. Bhattacharyya
Jack Bordan
Nancy Brodie
Matthew M. Douglass
M. P. du Plessis
Paul P. Fazio
Serge Gracovetsky
F. Douglas Hamblin
H. Stanley Heaps
J. Krantzberg
K. I. Krakow
S. J. Kubina
Sui Lin
James F. Lindsay
Cedric Marsh
J. Martynko
Hugh J. McQueen
John W. O'Brien
Oscar A. Pekau
Donald G. Roth
M. N. S. Swamy
M. Vidyasagar
George D. Xistris
Two Faculty Members
One Student Representative

12.1.7 COUNCIL OF THE SIR GEORGE WILLIAMS FACULTY OF SCIENCE

Dean Roger H. Verschingel, Chairman
Frederick W. Bedford, Secretary
Leonda Adler
Thomas Adley
John Becker
Peter H. Bird
Jack Bordan
Josef Brody
Victor Byers
Cathi Campbell
Andre Deland
Grendon Haines
Henry de Romer
Nelson Eddy
Hildegard Enesco
Etienne Lantos
Gerard Leduc
Frank MacLeod
Mohammed Malik
Juy Masson
James McBride
David McDougall
Stanley Morris
John W. O'Brien
John Senez
Ramesh Sharma
Russell Sharp
Roderick E. Townsend
Muhammed Zaki
Marta Zimmerman

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WESTBURY, R. A., BSc PhD McG. Associate Professor of Chemistry

WHITCOMB, E. A., BA MA Manit., PhD Lond. Assistant Professor of History

WHITE, Donna, BS Ohio, MS PhD Pitt. Assistant Professor of Psychology and Education

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WHITTOME, Irene, DiplFA Vancouver School of Art Assistant Professor of Fine Arts

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WILBUR, R., BA Mt.All., MA Qu. Professor of History

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WISE, R. A., BA MA Calif. State, PhD McG. Associate Professor of Psychology

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WRIGHT, Mrs. B., BA S.A., MA S.A. Assistant Professor of Economics

WRIGHT, Virginia D., BA Smith Coll., MA PhD Indiana Assistant Professor of Applied Linguistics

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ZAKI, M., BSc Luck., MSc Alig., PhD Montr. Associate Professor of Mathematics

ZEMAN, V., PhD Prague Associate Professor of Philosophy

ZIELINSKI, Zenon A., Inz MTechSc DTechSc Politechnika Warszawska Eng Que Professor of Engineering

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ZUCKERMANN, Mrs. J., BA MA PhD Oxon Associate Professor of English

ZWEIG, J. P., BSc SGW, MA McG., PhD Col. Professor of Psychology

12.1.11 EMERITUS PROFESSOR

BRIDGES, James, W., BA McG. PhD Harvard

12.1.12 RESEARCH PROFESSORS

Full-Time

CHEUNG, M. S., BSc Chu Hai Coll. H.K., MSc PhD Calg. Research Assistant Professor of Engineering

DESJARDINS, Y. C., BSc ME New Br. Research Assistant Professor of Engineering

DRANSFIELD, P., Dipl Syd. Tech Col., BEng N.S.W.U.T. PhD Sal. Visiting Research Professor of Engineering

McKINNON, M. G., BEng N.S.T.C., MSc PhD Sask. Assistant Professor of Engineering

THULASIRAMAN, K., BEng MSc PhD Madr. Visiting Research Associate Professor of Engineering

Part-Time

ALLEY, D., BA Dal., MA Br.Col. Research Associate Professor of Computer Science

12.1.13 LIBRARIANS

ANDERSON, Hilari, BA Wis., MLS McG.
APPLEBY, Judith, BA SGW, MLS McG.

BOUCHER, Lorna, BA SGW, BLS McG.
BRANDSTADT, G., BA Wat.Luth., BLS Tor.
BRUCE, Elaine, BA Windsor, BLS Tor.
BRUCHA, Beverley, BA BLS McG.
CAMERON, Dorothy, BA BLS McG.
CAMPBELL, M. Cathrin, BSc BLS Ott.
CARPENTIER, Louise, BA Laval, BLS Tor. MBibl Montr.
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CLOUTIER-HAYES, Margueritte, BSc MLS McG.
COORSCH, Katherine, BA SGW, MLS McG.

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12.1.14 FACULTY PART TIME

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ADKAR, C., BEng Rensselaer Polytechnic Inst. Eng Que Lecturer in Electrical Engineering
AHAD, S., BEng Cairo, ME McG., Eng Que Lecturer in Electrical Engineering
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AKMAN, D., BSc Montr., MA Penn. Lecturer in Sociology
ALBRIGHT, D., BS Concordia Coll., MEd North Dakota, DEd Indiana
ALI KHAN, M., BSc McG. CA Lecturer in Accountancy
ALLEN, C., BA McG., BCL McG. Lecturer in Management
ALLEY, D., BA Dal., MA Br.Col. Lecturer in Computer Science and Social Aspects of Engineering
ALTMAN, E., BA SGW Lecturer in Applied Social Science
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ATWOOD, N., BComm Manit., MSc Ill. Lecturer in Marketing
AUSTIN, K., BMus McG., MMA McG. Lecturer in Music
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BAIN, M. Lecturer in History
BAKER, D., BSc Br.Col.
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BARDT, Elisabeth, BFA SGW Lecturer in Art Education
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GRAY, Jane Lecturer in Applied Social Science

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McCALL, IRVA K. Lecturer in Visual Arts

McCORMACK, D'Yonne Lecturer in English

McLEOD, R. T., BComm SGW, CA Lecturer in Accountancy

McLEOD, V., BASc Wat. Lecturer in Computer Science

McSWINEY, C. Lecturer in Computer Science

MEADOWCROFT, J., BSc McG., MA McG. Lecturer in English

MEARNS, R., BSc SGW Lecturer in Mathematics

MEHTA, Carmen, Performance Degree Voice, Teacher Degree Piano Royal Conservatory of Music, Tor.

MEINTEL, Deirdre BA Univ. America Wash., MA Brown Prov. Lecturer in Anthropology

MELOCHE, G., BA Ott., DESD Ott. Lecturer in Management

MENDELSOHN, J., Academy of Music, Tel Aviv, Manhattan School of Music, N.Y.

MENSES, J. Lecturer in Visual Arts

MERCILLE, S., BComm SGW, CGA Lecturer in Accountancy

MERSON, K., BComm SGW, CA Lecturer in Accountancy

METCALF, J., BA Bristol Lecturer in English

MICHEL, J. B., MA Paris Lecturer in Modern Languages

MIELITZ, R., BA Sask., BFA SGW, MA SGW Lecturer in Visual Arts

MIGOTTI, L. H., MA Camb. Lecturer in Mathematics

MIKHAIL, W. B., BSc Assiut, MSc Calg., DEng SGW Adjunct Assistant Professor of Electrical Engineering

MILKMAN, Lauretta, Prem Grand Prix Lic de Concert Lycée Musical

MILLER, B. Lecturer in Biology

MILLER, G., BSc SGW, MA McG. Lecturer in Mathematics

MILLER, J. Lecturer in Biology

MILLER, M., BComm SGW Lecturer in Accountancy

MILLER R. Lecturer in Visual Arts

MILLS, M Lecturer in Cinema

MIRZA, I. A Lecturer in Education

MITCHELL, D. Lecturer in Education

MONAGHAN, R., BA Montr., MA S. Fraser, PhD York Lecturer in English

MONARO, S., Dottore in Fisica Milan Associate Professor of Physics

MONGENOT, G., Lecturer in French

MOORE, D. Lecturer in Visual Arts

MOORE, R., BSc Qu., MA Qu., PhD Wash.

MOORE, R., BComm SGW, CA Lecturer in Accountancy

MORGAN, J. Lecturer in Psychology

MOSZKOWSKI, D., BComm SGW, CA Lecturer in Accountancy

MUIR, G., BFA Minn. Lecturer in Visual Arts

MUKHERJEE, S. K., BSc Punjab Engin. Coll., ME Jad. Lecturer in Computer Science

MULLETT, Mrs. Sheila, BA McG. MA PhD Purdue Assistant Professor of Philosophy

MUNRO, R. G., BComm SGW, CA Lecturer in Accountancy

MURPHY, M., BSc Montr., MSc Holy Cross, Worcester Lecturer in Marketing

NEEMEH, R. A. BEng Alexandria, ME McG., Wng Que. Lecturer in Mechanical Engineering

NEMETH, G. A., BA SGW, MSc McG., PhD McG. Lecturer in Psychology

NEMIROFF, Greta, BA McG., MA Bos. Lecturer in Humanities

NEMIROFF, M., BA SGW, BSc SGW, MA SGW Lecturer in English

NEWMAN, D., BEng McG. Lecturer in Management

NICHOLLS, P., BSc SGW

NICHOLLS, W. D., BA SGW, MA McG. Lecturer in Economics

NKIWANE, S., BA Colorado, MA Macq. Lecturer in Political Science

NOZETZ, H., BComm SGW, MBA SGW, CA Lecturer in Accountancy

OBADIAH, M. Lecturer in French

O'BRIEN, P., BA Bishop's, LLL Laval Lecturer in Management

O'CONNOR, A., BA Loyola, BSc McG. MA Montr., PhD Montr.

O'CONNOR, Rev. E., BA St. M., MA Tor, PhD Harv., STL Weston Coll., Mass

O'CONNOR, T. G., BA Loyola Lecturer in English

ODOM, H. H., SB Mass., SM Mass., PhD Harv. Visiting Assistant Professor of Interdisciplinary Studies

OLSEN, S., BA Swarthmore Coll., Penn. Cert in Gen and Econ Geog Paris, MA Johns H. PhD Johns H.

OPPACHER, F., PhD Vienna Lecturer in Philosophy

ORR, J., MSc Berkley, Eng Que Lecturer in Mechanical Engineering

OUELLETTE, J., BA Montr., PhD Hebrew Union Lecturer in Religion

PAGE, R. Lecturer in Music

PARE, D. D., PhD Flor., MSc Fordham MA Gonzago (Wn.), BTh Tor., BA Gonzago Lecturer in Applied Social Science

PARRY, Penny Lecturer in Psychology

PATERNE, D., BesL Bordeaux Lecturer in French

PEARSON, J., BA Loyola, BEd St.Jos. Montr. Lic Ped Montr., MA Ohio State Lecturer in Quantitative Methods

PENNEY, Lea K., FIL Lond. Lecturer in French

PETKOVIC-LUTON, R. A., Dipl Ing Belgrade, ME McG Lecturer in Mechanical Engineering

PHILLIPS, A., Conservatoire de Musique du Québ.

PHULL, P., MTM SGW Lecturer in Mathematics

PHULL, S., BA Punj., BT Punj., MA Jab., MTM SGW Lecturer in Mathematics

PINSKY, R., BA SGW, MTM SGW Lecturer in Mathematics

PINSKY, R., BA SGW, MA McG. Lecturer in English

PLOTEK, L., BFA SGW Lecturer in English

PODESTO, B., BSc MScA Laval, Eng Que Lecturer in Electrical Engineering

POLLARD, W. A., BSc Lond. Lecturer in Mechanical Engineering

PORTNER, Chris., BSc McG., BCL McG. Lecturer in Management

POSNER, S., BSc McG., ASA Society of Actuaries

POTTIER, J., BA McG., MA W. Lecturer in Psychology

POULTON, C., BScE Johannesburg, ME SGW Lecturer in Civil Engineering

PRATT, P. G., BA DBqu. IA., MA Wayne St. Lecturer in Spanish

PRICE, Mrs. A., BA Tor., MEd McG.

PRINSKY, H., BSc Penn. Lecturer in Management

PROCTER, D., MA Oxon, MA McG. Lecturer in English

PROVENCHER, A. Lecturer in French

PUJOS, M., BA LèsL Dakar Lecturer in French

QUEENAN, B., MA Glas., Teach Dipl Glas. Coll., BEd Glas.

QUELCH, P., BSc (Civil Engg) Aston, MSc (Civil Engg) Qu., MBA Qu Lecturer in Quantitative Methods

QUICK, Cynthia, BA Tor. Lecturer in English

RADHAKRISHNAN, T., BEng Guindy, MTech, PhD I.I.T. Kanpur Lecturer in Computer Science

RAIKES, R., BComm Br.Col., MA McG., CA Lecturer in Accountancy

RAUCH, S., BEng ME McG., Eng Que Lecturer in Electrical Engineering

REDDY, P. V., BA S.A., BA S.A., MA S.A., PhD(Ed) Lond. Lecturer in Education

REDMOND, N. Lecturer in Biology

REED, Carole, BA SGW Lecturer in English

REIMER, Frances M., BA Br.Col., MA Br.Col. Lecturer in Sociology

REIZES, H., Dipl Ontario Coll. of Art

RICHARDSON, Astrid, BA McG., MA McG. Lecturer in Political Science

RICHARDSON, D. Special Lecturer in Fine Arts

RIOUX, G., FA MA Sorbonne Lecturer in History of Art

RIVERS, R. Z., BA W. Ont., MA Victoria, N.Z. Lecturer in Institutional Administration

ROBB, Margaret, BA McG., MA McG. Lecturer in Marketing

ROBERTS, A. Lecturer in Music

ROBERTSON, D., BA Tufts, MS Suny Albany Lecturer in English

ROBERTSON, K. Lecturer in Mathematics

ROBERTSON, L., BComm SGW, RIA Lecturer in Accountancy

ROBINSON, Billy, Cert of Performing Arts in Jazz North Texas State Univ.

ROBITAILLE, G., Dipl (Orff) Ecole Normale de Musique, Conservatoire de Musique du Queb Lecturer in Music

ROCA de MULLER, Mrs. A., MA Phil. Lecturer in Modern Languages

ROCHEFORT, G., BA Univ of Sudbury, BSc McG., MSc McG., PhD McG.

ROCHEFORT, M., BA Montr., BCL McG. Lecturer in Management

ROMANDINA, T. Lecturer in Music

ROMANDINI, A. Lecturer in Music

ROME, D., BA Br.Col., BLS McG., MA Montr. Lecturer in Religion

ROOME, W., LLD Lecturer in Modern Languages

ROSENBERG, M. Lecturer in Sociology

ROSENBLOOM, P., BA Penn., PhD Stan. Lecturer in Mathematics

ROUBEN, B., BSc McG., PhD M.I.T. Lecturer in Mathematics

ROUSE, R., BA SGW Lecturer in Applied Social Science

ROY, E., BA Sask., MA Tor.

ROY, M., Lecturer in Modern Languages

RUBER, H. Lecturer in Botany

RUDDY, J., BSc Loyola Coll., BEd St. Joseph's Teach. Coll., MEd St. Michael's

RUSHBROOK, J. S. Lecturer in Mechanical Engineering

SADDIK, J., BA Uquam Lecturer in French

SANCHEZ, Myriam F., PhD Cuba, MA Cuba BA BSc Cuba Lecturer in Spanish

SCHNEIDERMAN, P., BA McG. Lecturer in Theatre Arts

SCHREIBER, B., BA SGW, MA Johns H. Lecturer in English

SCHWARTZ, M., BComm SGW, MBA McM. Lecturer in Marketing

SEAL, Sheila, BA McG., PhD McG. Lecturer in Psychology

SEGAL, Celina, BFA SGW Lecturer in Visual Arts

SEMENIUK, S. W., BComm Windsor, MBA Mich. Lecturer in Finance

SERRANO, R., Lecturer in Modern Languages

SERRUYA, Mrs. Charlotte, BA SGW Lecturer in French

SEVIGNY, P., BA Laval Lecturer in Finance

SHANKER, R., BA Raj., MA Raj., PhD Sorbonne Lecturer in Religion

SHARP, Marjorie, BA SGW, BCL McG., LLB McG. Lecturer in Management

SHARP, R., BSc SGW Lecturer in Physics

SHARPE, P. M., BSc Exe., MSc McG. Lecturer in Computer Science

SHAUGHNESSY, J., BA Loyola Coll., BEd St. Joseph's Teach. Coll., MTM SGW

SHEERAN, D. E., BSc San Diego, MSc PhD North West Lecturer in Civil Engineering

SHEIKH, K. Lecturer in Biology

SHLOSSER, Franziska E., BA SGW, MA McG. Lecturer in Classics

SHOUB, B., BSc McG., MTM SGW Lecturer in Mathematics

SIDORENKO, E., BA Montr., BPh Lecturer in Modern Languages

SIEGEL, Lois, BSc Ohio, MA Ohio Lecturer in Cinema

SILAS, M., BA McG., MA McG., Dipl Ed Lond. Lecturer in English

SILVER, Vivian, Lecturer in English

SIMCOE, A., BSc Tor. Lecturer in Quantitative Methods

SIMON, Shoshana, BA Jerusalem Lecturer in Hebrew

SIMS, M., BA McG. Lecturer in English

SIRSLY, C. E., BA Loyola, MBA SGW Lecturer in Marketing

SKELLY, W. B., BComm SGW, MBA SGW Lecturer in Accountancy

SKULSKI, H., PhD Montr. Lecturer in Modern Languages

SLEJSKOVA, Nadezda, BSc McG., MA McG. Lecturer in Russian

SMITH, G., BA Guelph

SMITH, G., CA Lecturer in Accountancy

SMITH, Vivien E., BA Ott., BEd Montr. MEd St. Michael's Coll., Vermont, MSc N.Y., PhD Kansas State Lecturer in Institutional Administration

SOMERS, B., BA Loyola, MA McG. Lecturer in Economics

STAMM, J., DDS Alta., MScD Tor., DDPh Tor.

STANBRIDGE, R., Lecturer Visual Arts

STARK, Ethel, McG. Conservatory of Music Grad Curtis Inst. of Music, Philadelphia Lecturer in Music

STAVRIDES, Katerina, BA Car. Lecturer in Modern Languages

STEE, J., BA McG. Lecturer in English

STEFANOVIC, V. R., BEng Belgrade, ME McG. Lecturer in Electrical Engineering

STEINER E. S., BComm SGW, CA Lecturer in Accountancy

STENSON, H., BA Brown, MMus Syr. Lecturer in Music

STEPHENS, D. A., BSc Birm., MSc Birm. Lecturer in Chemistry

STEVENS, Mrs. Florence, BA MA SGW Special Lecturer in Education

STEWART, B., RN School of Nursing M.G.H., BN McG.

STEWART, N. F., BA Br.Col., MA PhD Tor. Lecturer in Computer Science

STREI, G., Lecturer in English

STUUROP, G., BComm SGW, MBA SGW Lecturer in Marketing

SULLIVAN, Ilse, BA SGW, BEd Montr. MEd Tor. Lecturer in Applied Social Science

SURREY, P., Lecturer in Visual Arts

SUTHERLAND, D., BComm SGW, CA Lecturer in Accountancy

SVISTUNENKO, Juris, BEng McG., MBA W. Ont. Lecturer in Management

SWAN, R. A., BA Bishop's, MA W. Ont. Lecturer in Finance

SWIBOLD, S., BFA Chic., MFA Mich., Lecturer in Visual Arts

SYLVESTER, Kim, BS (Ed) Univ. of Maine BS Univ. of Maine, MA Indiana

SZABO, E. L., PhD Nott. Lecturer in Mechanical Engineering

TABAC, S. T., BComm McG., MBA Mich., CA Lecturer in Accountancy

TABER, J., New England Conservatory of Music Lecturer in Music

TAKACH, Leslie, MA SGW Lecturer in Geography

TATOSSIAN, A., RCA

TEAYS, Wanda, BA Calif., MA Alta., Lecturer in Philosophy

TEKEL, Rose, BA SGW, MA SGW Lecturer in Sociology

TEVEL, A., BComm SGW, MBA McM. Lecturer in Finance

THOMAS, A., BSc W.I. Lecturer in Mathematics

THOMAS, A. NATD Art Ed Port Elizabeth School of Art, S.A., BA SGW

THOMPSON, D. Lecturer in Economics

THOMSON, R., BSc ARCST PhD Glas. Lecturer in Mechanical Engineering

THYAGARAJAN, K. S., BEng Madr., MTech I.I.T. Kanpur Lecturer in Computer Science

TOBBER, F., BEng McG., BA McG. Lecturer in Quantitative Methods

TODD, P. Lecturer in Visual Arts

TOMASEK, O., BEng Prague, BSc SGW Lecturer in Quantitative Methods

TOOBY, N. D., BComm SGW Lecturer in Accountancy

TORAK, F. Lecturer in Music

TOWNSEND, D. F., BComm SGW, MBA SGW Lecturer in Quantitative Methods

TRASK, F. S., BA Acad., BComm Lecturer in Quantitative Methods

TRIPP, Janet, BA W. Ont., MA Mich. State PDt MGH Dipl in Dietetics

TRUEMAN, C., BEng ME McG. Lecturer in Electrical Engineering

TUROWETZ, A., BA SGW, MA McG.

TURPIN, Gisele, Lecturer in French

USHER-JONES, B. E., BComm SGW, CA Lecturer in Accountancy

VALASEK, J., BEng & Arch MSc Prague Lecturer in Civil Engineering

VALERY, S., Dipl Conservatoire d'Art Dramatique de Queb.

VALLEJO, Mrs. I. Lecturer in Spanish

VANDERSLUIS, C., Ing Delft, Eng Que Lecturer in Electrical Engineering

VANDYCKE, Jacqueline, Lecturer in French

VELLA, G., BSc Loyola, Montr. Instructor in Chemistry

VENOR, R., Dipl Ecole des Beaux Arts

VERCHERE, B., LLB Br.Col. Lecturer in Accountancy

VEROFF, M., BComm SGW, CA Lecturer in Accountancy

VERRON, A., BA Caen, MA McG. Lecturer in French

VIAL, Patricia N. Lecturer in Spanish

WAGSCHAL, H., BA SGW Lecturer in Education

WAGSCHAL, Marion, BA SGW Lecturer in Visual Arts

WARD, D. A., BSc Alta., MBA W. Ont. Lecturer in Management

WARDA, R. D., BASc Br.Col., PhD Camb. Lecturer in Mechanical Engineering

WATSON, Gayne L., BComm SGW, MBA SGW Lecturer in Marketing

WEINSTEIN, L. Lecturer in Education

WEINTRAUB, P., BComm SGW, MBA McM. Lecturer in Marketing

WEISS, Mrs. Barbara Lecturer in Education

WEST, C., CA Lecturer in Accountancy

WEST, M., PhD Alta., MSc Mass., BA SGW Lecturer in Applied Social Science

WHITEHALL, E., CA Lecturer in Accountancy

WHITEHORN, A. J., BA York, MA Car. Lecturer in Visual Arts

WHITFORD, J., BA Lecturer in Modern Languages

WILCHER, A. Lecturer in Hebrew

WILLIAMS, M. O., BComm McG., LA McG., CA Lecturer in Accountancy

WILLS, K., BID Pratt Institute

WINDEBANK, J., MA Dal. Lecturer in Social Aspects of Engineering

WINSLOW, J., BA Conn., MSc Conn.

WISEMAN, Marcy, BA SGW Lecturer in Music

WOLF, P. A. Lecturer in Computer Science

WOLFE, J., BA McG., MA McG. Lecturer in Political Science

WOLKOVE, P., CA Lecturer in Accountancy

WOO, P., BSc McG., MSc Alta. Lecturer in Computer Science

WOODING, G. C., BComm SGW, MA Ohio State Lecturer in Accountancy

WOODS, K. W., BSc, Br.Col., MBA SGW Lecturer in Finance

WRIGGLESWORTH, J., BA McG., MTM SGW Lecturer in Mathematics

WRIGHT, J., BA BR.Col. Lecturer in English

WRIGHT, R., BSpScA R.M.C. Lecturer in Management

WYATT, J., BA Texas Tech., LLL Montr. LLM Texas Lecturer in Management

YAFFE, S. B., BA SGW, MBA W. Ont. Lecturer in Management

YEDID, A., BComm SGW, MBA SGW Lecturer in Quantitative Methods

YOUNG, S., BA SGW Lecturer in Applied Social Science

YOUSSEF, A., BA Cairo, ME McG. Lecturer in Electrical Engineering

ZALINGER, D. A., BA Colorado, MSc Victoria, PhD Memorial Lecturer in Quantitative Methods

ZEMNICKIS, R. Lecturer in Visual Arts

ZIMMER, H., BA McG., CA Lecturer in Accountancy

ZWAIG, Marilyn, BA SGW, MA Syr. Lecturer in Education

12.1.15 MUSICIANS IN RESIDENCE

ANDREWS, Kenneth, BMus Indiana, Montreal Symphony Orchestra

BOWMAN, Peter, New England Conservatory of Music, Montreal Symphony Orchestra

CARROL, D. H., BMus New England Conservatory of Music, LicDipl Royal Academy of Music (London) Montreal Symphony Orchestra

DUMOUCHEL, Michael, BMus Eastman Montreal Symphony Orchestra

13 Admission Regulations

13.1 Admission to Concordia University

The Loyola Campus and the Sir George Williams Campus of Concordia University maintain separate Admissions Offices.

Candidates should apply to the Admissions Office of the campus they plan to attend. Applications and information regarding admission requirements may be obtained by contacting the appropriate office.

Sir George Williams Campus
(full and part time students)
Admissions Office
1455 de Maisonneuve West
Montreal, Quebec
H3G 1M8
879-4280 879-5955

The office is located at:
Room 220
1435 Drummond Street
Montreal

Loyola Campus
(1) day students: full and part time
Admissions Office
7141 Sherbrooke Street West
Montreal, Quebec
H4B 1R6
482-0320 Local 409

The office is located at:
CC-215
(2) evening and summer school
Loyola Evening Division
7270 Sherbrooke Street West
Montreal, Quebec
H4B 1R6
482-0320 Local 700

Graduate Students
(full and part time)
Graduate Studies Office
1455 de Maisonneuve West
Montreal, Quebec
H3G 1M8
879-7314 Loc. 700

The office is located at:
Room S205
2145 MacKay
Montreal

13.2 CLASSIFICATION OF STUDENTS

1) Undergraduate Students: Undergraduate students are those who meet the full admission requirements of the university and who have been formally accepted for admission to a faculty of the university. These students enroll in either the Day or Evening Division with the intention of completing the work required for a degree. If a student is admitted to a degree programme, he will be classified as an undergraduate whether he is taking several subjects or only one in any given year.

2) Mature Students; Mature students are those who are at least twenty-one years of age, who do not possess the minimum academic requirements for admission to undergraduate studies, but who have been formally admitted to a programme of study leading to an undergraduate degree.

3) Independent Students: Students who do not wish to proceed to a degree irrespective of the number of courses they may be following in any given year are classified as independent students. Students who register as independent students are not considered to have satisfied the undergraduate admission requirements and have no standing towards any degree at the university. If an independent student later transfers to undergraduate standing, he may receive credit towards his degree for the courses already taken, provided they apply towards the degree requirements at the time of transfer.

Students at Concordia University may attend full-time or part-time. Full-time students are those registered for 24 or more credits per academic year, or its equivalent. Part-time students are those who carry less than 24 credits per academic year, or its equivalent.

**The normal full-time course load is 30 credit hours per year.*

13.3 Degrees offered

Bachelor of Arts
Bachelor of Commerce
Bachelor of Computer Science
Bachelor of Education
(Teaching English as a Second Language)
Bachelor of Engineering
Bachelor of Fine Arts
Bachelor of Science

13.4 Admission Requirements

(Day and Evening Divisions)

13.4.1 QUEBEC

A) Successfull completion of a two-year pre-university programme in a CEGEP, or CEGEP-equivalent programme, with the award of a Diploma for Collegial Studies.

B) Within this general programme, successful completion of whatever specific courses are required for entry into a given undergraduate programme. These pre-

university "profiles", established through joint action of the Quebec universities and the Department of Education of the Province, will be found in the Department of Education booklet, "Accueil 75 — Structures d'accueil aux études universitaires de premier cycle pour Septembre 1975". For the convenience of applicants, requirements are listed in each faculty section of this calendar.

C) The completion of certain three-year technological programmes leading to a Diploma for Collegial Studies will also satisfy the requirements for admission.

13.4.2 OTHER PROVINCES

Non-Quebec students may be considered for admission to 90 credit or 120 credit undergraduate programmes leading to the above-mentioned degrees. The duration of the programme will be determined by the entrance qualification.

Students from other Canadian Provinces who have completed Grade 12 with an overall average of at least 65% in appropriate subjects will be considered for entrance into a 120 credit programme. Ontario Grade 13* graduates with a minimum overall average of 65% in appropriate courses may be admitted into a 90 credit programme. The completion of the Junior Division at Memorial University in Newfoundland will satisfy the admission requirements to a 120 credit programme.

**Those applying from Grade 13 to Engineering or Computer Science (Electronics/Systems or General Science options) will, in general, require four years to obtain the degree.*

Province	Minimum Entrance Requirement	Admits To
Alberta	Grade 12	120 Credit Programme
British Columbia	Grade 12	120 Credit Programme
Manitoba	Grade 12	120 Credit Programme
New Brunswick	Grade 12	120 Credit Programme
Newfoundland	Grade 12 or Junior Division (Memorial University)	120 Credit Programme
Nova Scotia	Grade 12	120 Credit Programme
Ontario	Grade 12	120 Credit Programme
	Grade 13	90 Credit Programme
Prince Edward Island	Grade 12	120 Credit Programme
Saskatchewan	Grade 12	120 Credit Programme

13.4.3 UNITED KINGDOM AND COMMONWEALTH

In order to be considered for admission into a 90 credit undergraduate programme, applicants must present five General Certificate of Education papers including at least two at the Advanced Level. Those wishing to enter the Faculty of Engineering-Bachelor of Engineering or Bachelor of Computer Science (General Science Option or Electronics/Systems Option) — must offer Advanced Level passes in Mathematics and Physics. Applicants to the Faculty of Science are normally expected to have Advanced Level passes in Mathematics and one Science. Candidates for admission to the Faculty of Commerce or the Bachelor of Computer Science (General Business Option) should include an Advanced Level paper in Mathematics. Any two acceptable Advanced Level papers will satisfy the requirements for admission to the Faculty of Arts (including Fine Arts).

For entrance to the Engineering Faculty, Higher National Certificates and Diplomas with passes at an appropriate level may be accepted in lieu of Advanced Level passes.

Students with better than average results in five acceptable Ordinary Level papers plus one full year of formal schooling beyond Ordinary level may be considered for admission into a 120 credit undergraduate programme.

Applicants from Hong Kong who have received the Hong Kong Certificate of Education (English) with good grades in five subjects and have completed one year of Form VI or hold the Hong Kong Certificate of Education (Chinese) with good grades in five subjects and have passed the Chinese University of Hong Kong Matriculation Examination may apply for admission to a 120 credit undergraduate programme.

Applicants to a four year undergraduate programme in Engineering or the 120 credit programme in Science are normally expected to have Mathematics and at least one Science subject; those applying to Commerce are advised to have Mathematics as part of their entrance qualification.

13.4.4 UNITED STATES

High School graduates from accredited schools who have followed an academic programme designed for university entrance may apply for admission to a 120 credit programme. Applicants are required to have a better than average school record and a suitable high ranking in their graduating class. While no set pattern of courses in high school are required, all applicants are expected to have taken four units of English. Those applying for admission to Science and Engineering must include three or four units in Mathematics and two in the Sciences. At least three units of Mathematics are recommended for admission to Commerce. The Committee on Admissions may approve slight deviations from the above pattern.

Students who have successfully passed Advanced Placement examinations in appropriate subjects with a grade of '3' or better will be granted some advanced standing.

An applicant seeking admission on the basis of one full year of undergraduate study may qualify for admission to a three-year or 90 credit programme. Students transferring with more than one year of undergraduate study, will be considered for an appropriate level of placement within the three-year undergraduate programme at this university. A minimum number of courses is required to

fulfill degree residence requirements. Further information may be obtained by writing to the appropriate Office of Admissions.

13.4.5 OTHER COUNTRIES

The following national certificates are recognized as qualifications for entrance to the undergraduate programmes provided that better than average grades have been attained. More specific information with respect to admission requirements and placement levels may be obtained by writing to the Office of Admissions.

Country	Certificate
Argentina	Bachillerato Universitario
Australia	Higher School Certificate or University Matriculation Certification
Belgium	Certificat d'Humanités
Czechoslovakia	Vysvedceni o Maturitni Zkousce
France	Baccalauréat (2ième partie)
Germany	Zeugnis der Reife
Greece	Akadimaiko
India	Intermediate Certificate or First Year of Three Year BA, BSc BCom (with Class I or Class II or First or Second Division standing.)
Iran	Sixth Year Secondary Education Certificate
Israel	Matriculation Certificate
Italy	Diploma di Maturita Classica Diploma di Maturita Scientifica
Lebanon	Lebanese Baccalauréat (2ième partie)
The Netherlands	Getuigschrift (Gymnasium or Lyceum)
Norway	Examen Artium
Pakistan	Intermediate or Higher Secondary School Certificate (with First or Second Division standing)
Poland	Swiadlectwo Dojrzalosci
United Arab Republic	General Secondary School Certificate
Vietnam	Vietnamese Baccalaureat (2ième partie)
Yugoslavia	Chegoranctbo or Svedocanstvo
International Baccalaureat	Certificate of Baccalaureat

13.5 Application for Admission

It is recommended that application for admission be made as early as possible on forms provided by the Office of Admissions. Academic certificates and other supporting documents not available at the time of application must be submitted as soon as they become available. Applicants are advised to apply early in order to allow sufficient time for evaluation and review of their application by the Office of Admissions. Final dates for the receipt of applications may be obtained by contacting the appropriate Office of Admissions.

13.5.1 ENTRY DATES

Students are admitted as Day undergraduates in September and January. Evening undergraduates are admitted in September, January, and June. Day undergraduates are also admitted to the Loyola Campus in June, for Summer School, Day or Evening.

13.5.2 JANUARY ADMISSION

In view of the increasing number of students who wish to enter university at mid year, Concordia University admits new students in January wherever possible. While this entry date has been introduced primarily to accommodate the CEGEP December graduate, other categories of students such as mature students are encouraged to take advantage of this plan.

The maximum course load for the Winter Term (January to April) equals half of the normal load followed during the regular academic year. Students may utilize summer courses to accelerate their programme. In some programmes, entry in January may be contingent upon the student following courses during the subsequent summer session.

13.5.3 MEDICAL EXAMINATION REPORT

Each student who is admitted to full-time study must submit a Medical Examination Report. The medical report is not required until the student has received formal notification of acceptance.

13.5.4 ADMISSION DEPOSIT

Each applicant who has been granted admission as a full-time student is required to submit a cheque or money order of $25.00 (Canadian) to confirm his intention of entering the university. This admission deposit is non-refundable, but will be applied towards tuition fees.

Students who receive an Early Conditional Acceptance but who do not successfully complete the minimum academic requirements for entrance and are subsequently refused admission will be refunded the admission deposit.

13.6 Criteria for Admission

13.6.1 THE HIGH SCHOOL TRANSCRIPT

Each applicant for admission applying directly from high school must request his high school principal to submit a certified copy of the high school transcript showing final marks in each subject in the penultimate year of the high school course, and the mid-year marks for the final year.

13.6.2 SECONDARY SCHOOL LEAVING CERTIFICATE (OR EQUIVALENT)

Each applicant applying directly from high school must submit, as soon as it is

available, his High School Leaving Certificate which must include a certified list of final marks in each subject. Readable photocopies are acceptable.

13.6.3 CEGEP TRANSCRIPTS

Transcripts must be sent directly to the appropriate Office of Admissions by the Registrar of the CEGEP. The results of the Previous semesters together with a certified list of courses being followed during the final semester must be submitted immediately. A final transcript showing the results of the final semester must also be submitted as soon as possible. Two copies of each transcript are required.

13.6.4 FORMER UNIVERSITY TRANSCRIPTS (OR EQUIVALENT)

Former university transcripts are not to be submitted by the applicant but must be sent directly to the Office of Admissions from the Registrar of his previous university. Two copies of each transcript are required. Although an applicant's records from several institutions may be summarized on one transcript, an application will not be considered until two official transcripts from each university attended have been received. These are required even though no credit may have been earned at an institution.

13.6.5 ACADEMIC LETTER OF RECOMMENDATION (LOYOLA CAMPUS ONLY)

Each candidate for admission to the Day Division must have his high school submit an academic letter of recommendation on the form provided by the University. This form is to be returned directly by the school, not by the applicant.

13.6.6 LANGUAGE PROFICIENCY

Any student applying from outside Canada, whose first language is other than English, must demonstrate that he is proficient in the English language by writing the Test of English as a Foreign Language administered by the Educational Testing Service.

Information and applications to write the test may be obtained by writing to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey, 08540, U.S.A. The University of Michigan English Language Test is also acceptable. Applicants should contact the E.T.S. as soon as possible in order that results of their TOEFL Tests do not delay or prevent their acceptance to the desired term of entry. All such students will be required to take a further examination upon arrival to determine their level of proficiency. Students of acceptable proficiency may pursue their planned course of studies. Others may be required to take an English language course.

For students applying from within Canada whose first language is other than English and who have had all or part of their secondary schooling in another language, the university assumes that such students will have assessed their ability to cope with a programme where the language of instruction is English.

These students should contact the appropriate Office of Admissions regarding any language testing requirements. No special adjustments can be made in the case of students unable to continue in their programmes through lack of English-language proficiency.

13.6.7 SIR GEORGE WILLIAMS CAMPUS ENGLISH LANGUAGE DIAGNOSTIC TEST

Sir George Williams assumes that Canadian non-Anglophone students applying to the three-years or 90 credit programmes on the Sir George Williams Campus have assessed their ability to follow courses conducted in the English language. To help those unsure of their competence, the university offers a voluntary diagnostic testing service, and a course is available for those who wish to improve their proficiency. This is a MSQP course which does not carry undergraduate credit. Students are advised to avail themselves of this service. Such students entering a 120 credit programme or Pre-Arts (Fine Arts) and Pre-Commerce of the Mature Student Qualifying Programme must write the Sir George Williams English Language Diagnostic Test.

13.7 Selection Process and Notification

Admission to undergraduate studies is based on a careful review of all credentials presented on behalf of a candidate. An application for admission is not given final consideration until all the required items have been submitted. However, the university does have an Early Conditional Admission Plan for applicants to the undergraduate programme.

13.7.1 EARLY CONDITIONAL ADMISSION

Applicants seeking admission to the undergraduate programmes may be granted a conditional acceptance on the basis of former records of study which should include mid-year results for the current year. Acceptance is contingent upon the student's successful completion of the final semester of study and upon meeting the prescribed academic admission requirements. Candidates admitted on the basis of Early Conditional Admission are, in general, notified prior to May 15.

13.7.2 LIMITED ENROLLMENT

In some programmes the number of qualified applicants may exceed the number of places available. The possession of the minimum requirements does not in itself guaranteee admission to any of the programmes.

13.7.3 TRANSFER STUDENTS

An applicant who has attended another university and wishes to transfer to the undergraduate programme at Concordia should understand the following conditions:
(1) Each application for admission with advanced standing is considered on its own merit.
(2) A student will not be given credit for courses taken in another university during

the same academic term in which he has registered for courses at Concordia University, unless special permission has been obtained in advance from this university.

(3) Any student who has registered at Concordia University and who wishes to take courses at another university for transfer of credit to Concordia University should first have the courses approved by Concordia.

(4) A student may not apply transfer credits towards the residence years at the university unless special permission has been obtained from the appropriate Faculty Council (see Residence Requirements).

13.8 Mature Students

Individuals who do not meet the minimum academic requirements for admission to undergraduate studies and who are twenty-one years of age or older may apply to enter a post-secondary programme which usually requires 36 credits above the normal degree requirements. This may involve fewer such courses in cases where the applicant is at least twenty-five years of age. Mature students may enrol as either full-time or part-time students.

The university assumes that the age of the student will have allowed him to acquire informally some of the general education given to younger students and as a result the programmes concentrate on the knowledge and skills which will be needed, to undertake a given undergraduate programme.

Candidates must be at least twenty-one (21) years of age within the calendar year in which they enter the programme. A birth certificate or any other acceptable proof of age must be submitted in support of the application for admission.

13.9 Admission as an Independent Student

University undergraduate entrance requirements are expected, but may be waived for independent students over twenty-one years of age, who have, through other experiences, the essential background for the course or courses. Nevertheless, the university reserves the right of decision as to the independent student's eligibility and, in certain cases, the right to ask for proof of appropriate university entrance requirements.

While independent students following single courses of interest are encouraged to enroll, priority will be given to students proceeding to a degree. Students should contact the Admissions Office for the proper procedure to follow.

13.10 The Process of Admission

How to Apply

Submit an application for admission to the appropriate Admissions Office as soon as possible.

It is the responsibility of the applicant to insure that all the supporting documents are submitted as an application can not be considered for admission until it is complete.

Enclose with your completed application forms all documents that are now available. You should submit copies of your High School Leaving Certificate which must include a certified list of final marks in each subject, if applicable. Readable photocopies are acceptable. Former CEGEP or University transcripts are not to be submitted by you but must be sent directly to the Admissions Office by the Registrar of your previous institution.

Applicants presenting certificates in a language other than English and French:

(1) You are required to submit:
(a) the original certificate or, preferably, notarized photostatic copies of these certificates.
(b) notarized English translation of these certificates.

(2) When the certificates do not include the subjects and the grades achieved in the individual subjects, you must submit certified statements from authorized officials of the institutions attended, or submit statutory declarations giving the required information.

15 Tuition and Fees

15.1 Tuition and Fees

The University reserves the right to change the published scale of fees without notice.

Tuition —	
Engineering courses —	$45.00 per course
All other courses —	$15.00 per credit
Other Fees —	
Associate Diploma Fee	$ 5.00
Copy of Registration Certificate	1.00
Course or section change— per subject	5.00
Duplicate of receipt	2.00
Graduation Fee	10.00
Late Registration Fee	10.00
Re-reading of paper	10.00
Removal of ''Incomplete''	10.00
Special Examination Fee	15.00
Supplemental Examination Written at Concordia	10.00
Written elsewhere— plus invigilation fee when applicable	15.00
Transcript of academic record	1.00

In addition to the fees set out above, students are required to pay certain Student Service Fees, Student Association Fees and other miscellaneous charges. The current rate of these fees and charges can be obtained from the Student Accounts Offices.

15.2 Payment of Tuition and Fees

Fall Registration —

Payment of tuition and other fees may be made in accordance with one of the following options:

a) payment in full at registration.

b) payment in two instalments —
1. at registration — one half tuition plus all other fees plus $5.00 deferred payment fee.
2. on November 1 — balance.

c) payment in four instalments —
1. at registration — one quarter of tuition plus all other fees plus $10.00 deferred payment fee.
2. on November 1 — one quarter of tuition.
3. on December 1 — one quarter of tuition.
4. on January 1 — balance.

Summer and Winter Registration—

Payment of tuition and other fees may be made in full at registration or in two instalments similar to those set out in b) above.

An additional charge of $5.00 will be made if instalment payments are not made on their due dates.

A charge of $5.00 will be made for cheques returned for any reason.

Failure to make payment, or to arrange satisfactory settlement, of amounts owing to the University when they become due is sufficient cause to bar the student from classes or examinations, and to withhold diploma, scholastic certificate or transcript of record until the debt is adjusted with the University.

Registration is not considered complete until satisfactory arrangements have been made for the payment of fees.

All contracts are subject to revision for the adjustment of errors or omissions.

15.3 Course Cancellation, Withdrawals and Adjustments

Students who withdraw from courses or from the University must comply with the requirements set out in the section ''Academic Regulations'' § 16.1.4 and § 16.2.12 of this calendar in order to qualify for a rebate of tuition according to the following scale:

Prior to the commencement of classes — full rebate of tuition minus the lesser of 6% of tuition or $25.00.

	Rebate of Tuition		
	1st term Courses	Two-term Courses	2nd term Courses
Commencement of classes to September 30	3/4	7/8	
October 1 to October 31	1/2	3/4	
November 1 to November 30	1/4	5/8	
December 1 to January 15		1/2	
January 16 to January 31		3/8	
Commencement of classes to January 31			3/4
February 1 to February 28		1/4	1/2
March 1 to March 31		1/8	1/4

Student Service Fees are subject to the same schedule of rebates as tuition. All other fees are not refundable.

16 Academic Regulations

The governing regulations are those of the campus where you are registering. Students may be subject to new regulations as enacted by Senate. It is the student's responsibility to be familiar with the regulations of the University.

16.1 Academic Regulations Loyola Campus

16.1.1 STATUS

Full-time students are those registered for the equivalent of 24 credits or more a year, or the equivalent of 12 credits or more each term.

Part-time students are those registered for the equivalent of less than 24 credits a year, or the equivalent of less than 12 credits each term.

A *degree candidate* is a student proceeding to a degree.

An *Independent student* is one who is not proceeding to a degree.

Full-time students in the degree programme will normally require three (3) calendar years to obtain a Bachelor's degree. The normal course load for each year is thirty (30) credits. A student may accelerate his/her programme by taking an increased work load. The guidelines for acceleration are outlined below.* Normally a student may not register for more than four (4) academic years as a full-time student. Part-time students who are degree candidates may follow a programme exceeding four (4) calendar years.

Students must complete at least half of their Programme at this Institution.

To continue in a programme as a degree candidate, a student must have passed two-thirds of the cumulative total of courses for which he is registered. This cumulative total includes repeated courses and all courses taken in equivalent programmes at other institutions. A student who fails to fulfil this minimum requirement must withdraw. In order to meet the requirements to re-register, a student may be permitted to take courses in the Summer School. This requires the approval of the Department Chairman, and is subject to meeting the registration requirements of the Summer School. A department may recommend that a student be allowed to re-register in that department even though the above conditions have not been met.

Students should consult the chairman of their department to determine the requirements for each type of degree. Normally, a candidate for an honours degree must maintain a minimum of 65% in each of the courses in his department.

***Guidelines for Acceleration**

With the permission of the Department Chairman and of the Dean, a student may accelerate his/her programme by taking 6 credits more than the year's load prescribed in the departmental programmes. This excludes courses taken in the Summer School. However, courses taken during the regular session at another university or campus must be counted as part of the year's work-load. Permission for accelerated programmes is reserved for students who have maintained a 70% average or more in the previous year on a full work-load.

16.1.2 HONOURABLE MENTION

Degrees may be awarded with one (1) of the following designations, provided that a minimum of 60 credits have been taken at this institution:

Summa Cum Laude — For an overall average of 90% or more in the courses taken at this university.

Magna Cum Laude — For an overall average of 80% to 89% in the courses taken at this university.

Cum Laude — For an overall average of 70% to 79% in the courses taken at this university.

Courses for which the students received "Credit" or which were graded on a Pass-Fail basis will not enter into the calculation of this average.

16.1.3 CREDIT

Normally one (1) full course is equivalent to six (6) credits for three (3) hours of lectures per week for two (2) terms. It may be possible to take half of a full course (three (3) credits) with the consent of the department concerned.

External Credit

A student who is registered as a full-time student at this university may obtain credit towards his/her degree for courses taken at another university, provided he/she has received *prior* approval of the course of study from his/her Chairman and Dean. It is the responsibility of the student to ensure that the course of study will satisfy the requirements of his/her programme. Only in exceptional circumstances may a student complete his/her final year at another university.

Para-Academic Activity

A student may undertake a research project in conjunction with a para-academic activity for academic credit if the project is accepted by the Para-Academic Credit Board.

Para-Academic Activity is any ongoing activity which is not sponsored by departments or disciplines *per se;* but which allows within its range the possibility of research and reflection on the activity, and whose merit can be measured by a sponsor.

A Para-Academic Project is an undertaking by a single student which can be

evaluated by a sponsor. Each project may last no more than one (1) academic year, and shall be the equivalent of three credits. The number of credits given for Para-Academic Activity shall be no more than six (6) spread over three (3) university years. A project may take the place of an elective, but not of a required course.

The Sponsor of a project must be a full or part-time member of the faculty, and may be a sponsor normally for not more than three (3) people.

The student selects the project and possible sponsor(s), and with the approval of the sponsor(s), submits a coherent outline of the proposed project to the Para-Academic Credit Board.

To be accepted, the project must meet the criteria of activity, reflection and presentation. With sufficient activity, resources and innovative ideas, the student must demonstrate that he/she has the means of completing the project, and that it will benefit him/her as a person within the context of his experience.

Independent Studies

It is the intention of this programme to provide encouragement to those students who show extraordinary commitment to independent studies and/or research as well as to remedy a lack of efficient channels for processing, evaluating and accrediting worthy independent research projects — whether they be carried out in academic, governmental or business institutions. It is hoped that I.S.P. projects will take into account not only the student's prior formal education but prior life-experience, work and independent studies as well as his/her future objectives; and to do this in a way that is not possible within the proper limits of established disciplinary boundaries. It is envisioned that credits obtained through the I.S.P. will be an integral part of the student's regular academic programme.

For detailed information concerning this programme (i.e. rules for project eligibility) please apply to the Directors of the I.S.P. . . . For the academic year 1975-76 these Directors are: Dr. Michael Hogben (Assistant Professor, Chemistry and Acting Director, Interdisciplinary Studies) and Dr. Dennis O'Connor (Assistant Professor, Philosophy).

16.1.4 REGISTRATION

Students must register annually at the times specified in the Academic Calendar. Each student must register according to faculty, department, programme, year (e.g. BSc Honours Mathematics 2) and courses.

Change of Registration includes transfer from one department to another. This option is not open to students who have been required to withdraw from a programme.

"Change of Registration" forms are available at the Records Office and require the approval of the Chairmen of the Departments and of the Dean. A student who wishes to change his/her registration must observe the deadlines listed in the Academic Calendar:

A) Changes Involving Registration in a New Course.

First term 3 credit or 6 credit course — registration must be completed before *Friday, September 19th*. Second term 3 credit course — registration must be completed before *Friday, January 16th*.

B) Changes Involving Only the Dropping of a Course.

First term 3 credit course — registration must be changed by *Friday, October 31st*. 6 credit course or second term 3 credit course — registration must be changed before *Friday, February 27th*.

16.1.5 GRADUATION

Degree candidates who expect to complete the requirements for a degree in a particular year must contact the Registrar's Office to make application for that degree. Forms are provided by the Transcript Office, Room C213, and must be submitted before the date indicated in the Academic Calendar. A student can receive only one (1) degree in any given faculty, and only one (1) degree in any given year. Students contemplating taking a second degree are advised to contact the Dean's Office to obtain more detailed information.

A student who has graduated from this University and wishes to proceed to another degree must spend at least one (1) more academic year as a full-time or part-time candidate. He/she must successfully complete a minimum of 30 credits in courses, other than those taken while registered for the first degree. He/she must register with a department in an approved programme.

16.1.6 GRADING AND EXAMINATIONS

Grading is the responsibility of the department in which the course is given. Part of the final grade in a course will be given to term work, which includes written assignments, seminar and tutorial participation, laboratories and term tests. The weight given to each of these items is decided by the individual instructor, subject to the approval of the department. The maximum proportion of the final grade which may be allotted to term work is 70%.

Normally, final written examinations are given in all courses at a time and place determined by the Registrar. A department may decide, however, that no final exam will be given in a particular course. This must be approved by the Dean of the Faculty, and communicated to the Registrar within the first four weeks of the course.

With the approval of the professor concerned, students may write their examinations, essays, term work etc. in French. Departments offering languages and literature courses may establish their own particular departmental policy regarding this.

A student doing a Para-Academic Activity Project presents the final report to the sponsor, who grades the project and transmits the grade to the Para-Academic Credit Board. The Board transmits the grade for credit, together with a brief description of the project, to the Registrar.

Students are expected to attend all lectures, seminars, tutorials, and laboratory periods for which they are registered.

Each student will receive a final grade in each course for which he/she is registered. All final grades will be submitted on a numer-

ical basis, including Pass-Fail courses. All final grades will require the approval of the Dean of the Faculty.

The grading scale for individual courses is:

A — First Class ..... 80% and over
B — Second Class ..... 65% to 79%
C — Third Class ..... 55% to 64%
D — Pass ..... 50% to 54%
F — Failure ..... 00% to 49%

The following categories are also used:

Pass/Fail
P — Pass ..... 50% and over
F — Fail ..... less than 50%

Aegrotat Standing
Cr. — Credit ..... 50% and over

Supplemental Examinations

In certain cases where a student has failed the final examination, he/she may be given a second opportunity to write a final examination paper. It is the responsibility of the student to make written application to the Registrar by the deadline specified in the Academic Calendar. Supplemental privileges will not be extended beyond the original date arranged by the Registrar.

Arts and Commerce

Students registered in Arts and Commerce Programmes are not eligible for supplemental examinations.

Science and Engineering

Students registered in the Science and Engineering Programmes may write supplemental examinations in any of their courses in which they have a failing grade of not less than 35%. No student will be allowed to write more than two (2) supplemental examinations in any one (1) academic year (not including Summer School courses). These supplemental examinations may be taken at the discretion of the department in which the original grade was given and with the approval of the chairman of the department in which the student is registered.

Special Examinations

If a student is unable to write a final examination or to complete the required work in a course because of accident, short illness, death in the family or for some other valid reason, he/she may apply to write a Special Examination. The application, accompanied by the pertinent documentation, should be made in writing to the Registrar. The application must be made within the prescribed time limit. In certain cases, a department may recommend an alternative course of action.

Aegrotat Standing

If a student is unable to write a final examination or complete the required work in a course because of prolonged and serious illness, he/she may apply for Aegrotat Standing in that course. The application, accompanied by the pertinent documentation, should be made in writing to the Registrar. The department may recommend a grade or the award of a credit.

Pass-Fail Courses

A full-time degree candidate may choose to take up to 30 elective credits (not more than 12 in one (1) academic year) that will be graded either Pass or Fail. The courses marked in this way will not enter into the student's average. This option must be exercised within four weeks of the beginning of the course. The student's decision must be sent to the Registrar.

Cheating and Plagiarism

Essays and research papers should demonstrate the student's ability to think originally and to use sources intelligently. Plagiarism represents a failure to think critically or creatively, and will usually result in at least a failing grade for the assignment.

In general, plagiarism is an attempt to "pass off" the words or ideas of another author as one's own. It includes *verbatim* copying or translating and/or paraphrasing directly or through translation without acknowledging the source by footnotes or quotation marks. This applies to a phrase, a sentence, a paragraph, an idea, or a pattern of ideas.

If the writer is conscientious, uses common sense, and has sufficient respect for his work as well as the work of others, plagiarism should not be a problem.

The penalties for cheating or deliberate plagiarism are severe. The minimum penalty is a grade of zero for the work involved. The student who requires more specific guidelines than are presented here, is advised to consult with the professor to whom he or she is submitting written work.

Students are warned that the purchase of term papers from advertized agencies will be regarded as an extremely serious instance of plagiarism and will be penalized accordingly.

Appeals

Every student has the right to appeal against the grade assigned to him/her in a particular course or a Para-Academic Activity project. He/she should contact the Student Ombudsman for information and assistance.

The procedures for Student Appeals (Academic) adopted by Senate are as follows:

The student's first step for any appeal is to consult with the professor. It is every student's right to meet with his/her professor and discuss his/her work, exams, etc., and have them re-evaluated by the professor.

Should the first step prove unsatisfactory to the student, his/her second choice is to appeal in writing to the Departmental Chairman. The student may or may not have already consulted the Student Ombudsman at this point.

The student must submit his/her appeal in writing to the Registrar within two (2) weeks of the mailing of marks from the Records Office.

The Chairman, upon notification by the Registrar shall:

(i) set up a Departmental Committee to review the student's term work, exams, projects, etc. It shall consist of two (2) faculty members from the same discipline (other than the professor concerned), and either one (1) student chosen by the chairman or a third faculty member chosen by the chairman should the student so desire;

(ii) request from the student the written grounds for appeal, and also from the professor a written response to the appeal.

The Departmental Committee will meet within seven (7) days after the Chairman has constituted it, and make its report within fourteen (14) days.

The Committee will invite the two (2) parties involved in the appeal (together if either party so requests), and all others who wish to testify, to appear before it for a personal interview. It shall arrive at a conclusion by meeting as often as necessary and reviewing any information offered on behalf of the professor or the student. The Committee shall, where possible, review the work of other students whose performance has been better, worse or equal to that of the student in question.

The Departmental Committee will convey in writing the decision of the Committee to the Student, Professor, Chairman, Dean, Registrar and the Student Ombudsman.

The next channel for appeal shall be open to appeals from either the student or the professor. The student/professor may appeal a departmental decision. This must be done within seven (7) days after notification. An appeal in writing should be sent to the Secretary of Council.

The appeal will be considered by the Board of Appeals. This Board will consist of two (2) faculty members and two (2) students. The four (4) members of the Board will receive a copy of the written appeal from the Secretary of Council. The Nominating Committee of Council will establish a panel of professors and students to serve on the Appeals Board on a rotational basis. The Board will itself select a fifth member, who may be a student or a faculty member, and who may or may not be a member of Loyola Campus. The Board will elect one of its own members to serve as Chairman.

In making an appeal to the Board of Appeals, the student/professor must give the grounds for the appeals. If the Board decides that the grounds are insufficient then it may refuse to hear the appeal.

If the Board agrees to consider the appeal, then it will investigate the whole appeal thoroughly: procedures, the Departmental Committee report, and all relevant documentation. It will investigate any irregularities which it finds. If new evidence is presented for either student or professor, it will be sent back to the Board and if it is judged to be substantial, it will be deferred to the Departmental Committee for hearing. Then the Board will have the authority to call in any witnesses who can present evidence relevant to the case.

The decisions of the Board of Appeals shall require a majority vote (i.e. at least three (3)) by written ballot. If no majority vote is obtained, the decision of the Departmental Committee stands. The decision shall be conveyed in writing to the Student, Professor, chairman, Dean, Secretary of Council, the Associate Registrar and the Student Ombudsman.

Decisions of the Board of Appeals are final.

16.2 Academic Regulations Sir George Williams Campus

These regulations are effective as of September 1st, 1971 and apply to students entering the three-year university programme, MSQP (Mature Student Qualifying Programme) and all Independent students. All others are governed by the academic regulations published in the 1970-71 University Calendar.

16.2.1 DEFINITION OF CREDIT

In accordance with the recommendations of the Quebec Council of Universities, effective 1974-75, the credit base takes into account the total activity of the student, in terms of lectures, conferences, laboratories, studio or practice periods, examinations, and personal work. One credit represents, for the average student, a minimum of 45 hours spread across the various activities listed above. This system does not apply to the Engineering programme where the definition of degree components is still listed in terms of years and courses.

Up to and including the academic year 1973-74, degree programmes have been expressed in terms of courses, with one credit being applied to a "full course" (normally two terms) and one half-credit being applied to a "half course" (normally one term).

16.2.2 CONCENTRATION REQUIREMENT

Since the CEGEP programme is designed to give all students the opportunity to explore different fields and thus acquire a broad general basis for further study, the undergraduate programme in Arts requires some degree of concentration, according to the interests and capacities of the student. There are several forms of concentration, ranging from Honours, which requires success in a programme of high concentration, accompanied by a prescribed high level of performance, through the Specialization and the Major, requiring varying degrees of concentration without a prescribed performance requirement, to the Double Minor, involving a lesser degree of concentration in two disciplines or fields, and without a prescribed performance requirement.

In order to graduate, therefore, a student must have completed one of the following types of programme: a Double Minor; an Interdisciplinary Major; a Departmental Major; a Specialization programme; a Combined Honours programme; an Interdisciplinary Honours programme; a Departmental Honours programme.

Prior to registration, students will be required to select one of the types of programmes outlined above. In the case of Honours, students will register upon entry in an Honours *programme*, but their acceptance as Honours *students* will depend on their performance during their first year. Students failing to meet requirements for Honours standing will proceed in either a Specialization or in a Major programme.

16.2.3 HONOURS PROGRAMMES

The university has approved programmes leading to an Honours degree in certain selected fields. The Honours programme, consisting of 60 or more credits in a discipline or field, with superior performance being required to enter and remain in the programme. It is recognized that a small number of courses may be designated as being open only to Honours students (e.g. Honours Essay, Honours Seminar, etc.). In order to qualify for an Honours degree a student must meet all of the academic qualifications and comply with the regulations set forth below.

1. A candidate for an Honours degree should indicate such intention at registration and consult the Honours representative of the department(s) concerned as soon as possible. Acceptance as an Honours student will depend on performance during the first year. The Honours standing will be reviewed annually.

A student who has followed the courses prescribed for the Honours programme and has met all the requirements may enter the programme with the approval of the Honours representative any time before beginning the final 30 credits. No retroactive approval of entry may be made.

2. A student who enters with advanced standing may apply pro tanto credits which are applicable to the Honours degree requirements, upon approval by the department(s).

A transfer student must complete a minimum of 30 credits in the basic Honours programme in residence to receive a degree with Honours.

3. An Honours student must maintain a 'B' average with no grade lower than 'C' in all courses in the basic Honours programme.

An Honours student must meet the general degree requirements as well as the specific requirements for an Honours degree, and must obtain at least a 'C' average over the total degree programme.

Failure in any course will mean suspension or withdrawal from the Honours programme. Students who fail to meet accep-

tance requirements and who are required to withdraw from the Honours programme will proceed as Majors. Reinstatement into the Honours programme is possible only by recommendation by the Honours representative.

4. A student shall be allowed to qualify for only one Honours degree in either a single or combined Honours programme.

5. A degree with Honours in any programme is granted upon graduation only with the approval of the Senate.

Honours Committee

Professor
R. B. ANGEL, *Chairman*

Professor
N. E. SMITH

Professor
J. STEWART

Associate Professor
E. B. MARKLAND

Secretary
Ms. M. OSBORNE

16.2.4 SPECIALIZATION PROGRAMMES

The Specialization, in keeping with the structures recommended by the Quebec Council of Universities, is an approved sequence of courses including 60 or more credits. This concentration may include certain approved courses in other closely related fields.

16.2.5 MAJOR PROGRAMMES

The Major, again in keeping with the structures recommended by the Quebec Council of Universities, is an approved sequence of courses including 36 or more credits. As in the case of the Specialization, the Major may include certain approved courses in other closely related fields.

16.2.6 DOUBLE MINOR PROGRAMMES

Double Minor programmes are made up of two approved sequences of 24 or more credits in two specific disciplines or fields. A student may combine any two Minors to form a Double Minor.

16.2.7 MAJOR-MINOR COMBINATIONS

A Major programme may be combined with a Minor programme.

16.2.8 ACADEMIC YEAR

Winter Session

The day and evening winter session of the university is divided into two terms of fifteen weeks each including the examination period. Dates marking the opening and closing of these terms are found in the Calendar of Events.

Summer Session

A nine-week session is operated during the summer in the Evening Division primarily for Evening Division students.

Summer Sessions and Special Day Summer Sessions are considered part of the following Winter Session for record purposes.

16.2.9 RESIDENCE REQUIREMENTS

1. In addition to the specified courses, there is a residence requirement of one year for any degree, defined as follows: A student in the Faculties of Arts, Science or Commerce must complete the last thirty credits of the courses of the degree requirements at Sir George Williams. Engineering students must complete the final ten half-credit courses of the required departmental degree programmes in residence at Sir George Williams.

2. Any student who already possesses one degree must complete, at Sir George Williams, a minimum of two years of residence in order to earn a second degree at the Bachelor's level. This regulation applies whether the first degree was earned at S.G.W. or at some other university.

3. Any student seeking to transfer to S.G.W. after having failed at another university or after having compiled an unsatisfactory record at another university must fulfill the residence requirements stipulated for him if he is admitted. In general, a minimum of two years of residence will be required for any degree.

16.2.10 COURSE LOAD

Winter Session — Day Division

The course load varies according to the faculty in which the student is enrolled. Students are advised, however, that a twenty-four credit course load is the minimum any Day Division student must carry in any winter session.

1) Arts

First year students in the Faculty of Arts will take a maximum of thirty credits. A student may take thirty-six credits during one or both of his final two winter sessions providing:

a) There are no failures in the previous year (minimum, thirty-credit programme) and,
b) The average grade of the previous year (minimum, thirty-credit programme) is 'B'.

2) Science and Computer Science

Students enrolled in the Bachelor of Science or the Bachelor of Computer Science programme will normally register for a maximum of thirty credits each winter session.

3) Commerce

A student may register for a maximum of thirty credits in any winter session.

4) Engineering

See under Engineering Faculty — § 71

Winter Session — Evening Division

Students in this division may register for a maximum of three six-credit courses or their equivalent equally divided between the terms.

Summer Session

Students may not take (without permission of their Faculty Council) more than twelve credits of work during a summer session. This regulation applies to students registering in courses offered in the Evening Division, Special Day Summer Sessions, or in a combined programme consisting of courses offered in either division. The course load for Special Day Summer Sessions may be restricted by departmental regulations.

Day students are reminded again that they may not register during the regular evening registration period for the Evening Summer Session unless prior permission of Faculty Council has been granted.

16.2.11 HIGH ACADEMIC ACHIEVEMENT

The University recognizes three classifi-

cations of high academic achievement.

Honours Programme

Students may register in an honours programme and by obtaining a grade point average of 3.00 in this programme receive a Bachelor's Degree specifying the honours subject. Full information on these programmes is covered within each faculty section of the university calendar.

Distinction

A Degree with Distinction may be achieved by students registered in any programme in the new three year structure by achieving a grade point average of 3.20 during their last two years (approximation) of study or a grade point average of 3.10 over the complete three years. Specific details of these regulations as well as the regulations for the old four year programme may be obtained from the Records Office. The achievement of Distinction is recorded on the degree certificate.

Academic Honours

Academic Honours (Dean's Honour Roll) may be achieved in any academic year by acquiring a grade point average of 3.00 for the thirty credits taken during that particular year. The achievement of Academic Honours is recorded on the student's transcript.

16.2.12 COURSE WITHDRAWALS, CHANGES, ADDITIONS

Withdrawals

1) Students may withdraw from a course or from the university without academic penalty prior to the deadlines indicated below. They are required to notify the Records Office in person or in writing and give their reasons for withdrawing. Students must present the copy of their registration contract when making course withdrawals, changes or additions. Failure to attend classes or notification to instructors does not constitute a formal withdrawal from the university.

2) Final withdrawal date for first-term courses is October 31. Final withdrawal date for full-year and second-term courses is February 27. Evening Summer Session course withdrawals must be effected by July 2. For procedures covering financial adjustments, see Fees. § 15.

Changes and Additions

Two-Term Courses

Course and section changes must be effected by September 19. Evening Summer Session course and section changes must be effected by June 6.

One-Term Courses

For the first term and second term, changes must be effected within the first week of classes in the appropriate term, although second-term courses may also be added during the course change period immediately following fall registration. Note that no one term course may be added after the first week of classes in the appropriate term. Evening Summer Session course changes must be effected by June 6.

Note that section changes are considered course changes and will thus be assessed.

16.2.13 EXAMINATIONS AND ADVANCEMENT

A university degree certifies that its holder has attained a measurable level of achievement, as established by a recognized system of evaluation. It is consequently required that the performance of each student in each course be evaluated by the instructor (or instructors) responsible for the course.

The final grade which assesses the performance of each student in each course will take into account the total measurable performance of the student in that course. Specifically, the grade will be given on the basis of one or more of the following.

(i) Assigned work, term papers, projects, etc.

(ii) Class participation, which in the case of certain disciplines may justify an attendance requirement.

(iii) Progress tests.

(iv) Laboratory tests and/or laboratory work.

(v) Mid-term and/or final examinations.

Where appropriate, a level of written expression may be given consideration in determining the final grade.

16.2.14 GRADING SYSTEM

Grades are awarded according to the following system:

(i) Passing Grades

A. Excellent
B. Very Good
C. Acceptable
D. Marginal
S. Credit (late completion of term work or passed supplemental examination)

(ii) Failing Grades

F	Failed Course—may write supplemental examination if eligible according to failure regulations.
FNS	Failed Course — no supplemental examination is set for this course.
Inc	Term work incomplete — may complete term work if eligible according to failure regulations.
Abs	Absent from final examination — may write supplemental examination if eligible according to failure regulations.
F-Inc	Failed course, term work incomplete — may write supplemental examination and complete term work if eligible according to failure regulations.
Abs-Inc	Absent from final examination, term work incomplete — may write supplemental examination and complete term work if eligible according to failure regulations.
R	Failed courses or absent from examinations, term work incomplete and/or unsatisfactory attendance where applicable — must repeat course for credit if permitted by failure regulations.

All grades remain permanently on the records. All final grades (including F, R, Inc., Abs. whether cleared later or not) are reported on transcripts.

16.2.15 FAILURE REGULATIONS

Failures

Failures include the grades F, FNS, Abs., Inc. and R.

Failed Students

1. Bachelor of Arts, Fine Arts, Science, Commerce and Administration, and Computer Science.

(a) Any student who fails courses equi-

valent to more than twelve credits before obtaining thirty credits on record or who fails courses equivalent to more than twenty-four credits before obtaining sixty credits on record is a failed student. To re-register such a failed student must obtain permission from the dean of his faculty.

(b) Any student who fails courses equivalent to more than thirty credits is a failed student. Such a failed student may not apply for re-admission.

NOTE: Students transferring from another university or between faculties at this university with previous failures may be subject to adjustments to the permissible number of failures for courses taken at this university. Students will be advised of this adjustment at the time of their transfer.

(c) Failed students may not write supplemental examinations nor complete courses graded Inc.

(d) Failed students who obtain permission to register may be subject to specified course loads a the time of their re-admission.

2. Bachelor of Engineering

(a) Failed students are defined in regulations 2, 6, 7 and 8 under "Additional Regulations in the Faculty of Engineering".

(b) Failed students may not write supplemental examinations nor complete courses graded Inc.

16.2.16 SUPPLEMENTAL EXAMINATIONS

1. A failed student may not write supplemental examinations.

2. A student may not write a supplemental examination in a repeated course, nor may he write a second supplemental examination in the same course.

3. If a student is granted permission to write a supplemental examination, absence from the examination is counted as a failure and recorded as an 'R' grade.

4. Medical reasons (certified by a physician on his letterhead) constitute a valid excuse for exemption from most of the regulations concerning supplemental examinations. Such medical reasons must be submitted to the Examinations Office within ten days of the missed examination.

a) A student absent from a regular examination for medical reasons may, if he wishes, write the supplemental examination as his final examination. If he passes he will receive a letter grade and will not be charged with a failure nor a supplemental under the maximum permissible allowances. If he fails he may apply to the Examinations Office to write an additional supplemental examination.

b) A student absent from a supplemental examination for medical reasons is not considered to have failed the examination and may apply to the Examinations Office for an alternate date.

c) A student taken ill during an examination and unable to complete the examination must obtain verification from the nurse on duty. Such certification must be submitted to the Examinations Office within ten days of the date of occurrence.

5. Supplemental examinations in courses taken during the regular session must be written during the following July. Supplemental examinations in courses taken during the Summer Session must be written the following December.

6. Supplemental examinations may be written only at one of the following external examination centres in Canada: St. John's, Nfld.; Sackville, N.B.; Murray Bay, Quebec; Montreal, Quebec; Toronto, Ontario; Sudbury, Ontario; Thunder Bay, Ontario; Winnipeg, Manitoba; Saskatoon, Saskatchewan; Banff, Alberta; Vancouver, B.C. Any student wishing to write a supplemental examination at an external centre (outside of Canada) must arrange an appointment with the Director of Examinations before submitting an application.

7. Supplemental examinations are graded only 'S' (pass) or 'R' (fail).

8. Application to write a supplemental must be submitted by November 3 for Summer Session, March 8 for graduating students and June 12 for Winter Session to the Director of Examinations on a form which may be obtained from the Examinations Office. Students applying to write a supplemental examination at an external centre must submit the additional external application form with the regular application form. The required fee must accompany all applications.

16.2.17 COMPLETION OF COURSES GRADED INCOMPLETE

1. A failed student may not complete a course graded incomplete (Inc.).

2. A student is ineligible to complete an 'Inc.' in a repeated course.

3. Application to complete a course graded 'Inc.' must be submitted by October 6 for Summer Session, March 8 for graduating students and June 12 for Winter Session to the Examinations Office. The required fee must accompany all applications. The limiting dates for submission of work are:

a) For the first-term courses in the Winter Session, not later than April 1st.

b) For all other courses in the Winter Session, not later than August 1st.

c) For all courses in the Summer Session, not later than November 1st.

4. Late completions are graded only 'S' (pass) or 'R' (fail) except for medical reasons (see regulations concerning supplemental examinations).

16.2.18 REPETITION OF COURSES

1. A student who has received credit for a completed course may not repeat that course and may not write a supplemental for purposes of upgrading, except as provided by the Additional Regulations in the Faculty of Engineering.

2. A student may repeat a failed course only once.

3. A student who fails a course that is specifically required for a degree must take the course during the Session in which he next registers. If a required course is taken for the first time during the Summer Session and is failed, the student may postpone his registration for repetition of the course until the Session following the regularly scheduled supplemental examination period for Summer Session Courses.

4. If a student repeats a course that is specifically required for a degree and fails it a second time, he may apply to Faculty Coun-

cil for permission to substitute an alternate course. Unless such permission is granted he will not be allowed to continue in the university toward that degree.

16.2.19 STUDENT REQUEST COMMITTEES OF FACULTY COUNCILS

Each of the faculties has a Student Request Committee which is authorized to consider applications from students on matters relating to academic regulations.

The academic regulations for the degree of Bachelor of Computer Science shall be the same as those for the Faculties of Arts, Science, and Commerce and Administration. Any undergraduate student seeking adjustment of an academic regulation should apply on the appropriate form available at the following Faculty offices:

Arts & Fine Arts
Asst. Dean of Arts

Science
Assoc. Dean of Science

Commerce & Administration
Asst. Dean of Commerce

Engineering & Computer Science
Asst. Dean of Engineering

16.2.20 MSQP AND INDEPENDENT STUDENTS

MSQP and independent students, including those taking courses in the Engineering Faculty, are governed by the academic regulations specified for the Faculties of Arts, Science and Commerce and Administration.

MSQP students seeking adjustment of an academic regulation should submit requests to the Student Request Committee of their Faculty.

Independent students must submit all requests relating to university regulations to the Registrar and *not to a dean or faculty council.*

16.2.21 ADDITIONAL REGULATIONS FOR THE BACHELOR OF ENGINEERING DEGREE

The grade point averages in these regulations are defined as follows:

(a) The cumulative grade point average, CGPA, is the ratio of the sum of the grade points obtained in the complete programme followed by the student prior to its calculation to the total number of courses in that programme, regardless of whether they were taken as an independent course student or as an undergraduate.

(b) The yearly grade point average, YGPA, is the ratio of the sum of the grade points obtained in the programme followed by the student during the year under consideration to the total number of courses in that programme.

Points are awarded for each grade as described in § 71.3.2. Courses taken during a Summer Session are included with those taken during the subsequent Winter Session in calculating the YGPA.

1. After their first year of attendance, students must maintain a CGPA of at least 1.80 to remain in good standing. If their CGPA falls below 1.80, they will be placed on probation for one year during which they must improve it to at least 1.80.

2. Probationary students failing to improve their CGPA to at least 1.80 are failed students and are required to withdraw from the programme.

3. Students in good standing who fail one-third or less of the courses taken during the year with a YGPA of at least 1.50 are permitted to write supplemental examinations in courses graded F or Abs. and complete the work in courses graded Inc.

However, the following regulation applies to students receiving an 'F' grade in the Fall-term course of a two-course sequence specified by the Engineering Faculty Council: if such a student is eligible to write supplemental examinations, and if, in the immediately subsequent winter term, he passes the second course of the sequence with a grade of 'C' or better, he will be awarded the grade of 'S' for the first course without further examination. In such specified cases, the regular examination in the second course shall serve also as a supplemental for the first course.

NOTE: Students awarded the R grade in the first course are not permitted to continue in the second in the same academic year.

4. If permitted to write supplemental examinations or complete the work in course graded Inc. at the end of the first year of attendance, students whose CGPA is below 1.80 at the start of the next Fall term will be placed on probation for one year during which they must improve it to at least 1.80.

5. Students eligible to write supplemental examinations or complete the work in courses graded Inc. and having more than one failure outstanding from the previous year at the start of the next Fall term must repeat all the failed courses and may repeat those in which they received D grades during their previous year of attendance.

6. Students who either (a) fail more than one-third of their courses taken during the year with a YGPA of at least 1.50 or (b) fail one-third or less of their courses taken during the year with a YGPA below 1.50 (this includes students who pass all courses) are failed students. They must repeat all the failed courses and may repeat those in which they received D grades during their previous year of attendance.

7. Students who fail more than one-third of their courses taken during the year with a YGPA below 1.50 are failed students and must' withdraw from the programme for at least one year. They may then apply to the Assistant Dean, Undergraduate Studies, Engineering and Computer Science for re-admission and, if their application is granted, must repeat all the failed courses and may repeat those in which they received D grades during their previous year of attendance.

8. Students whose CGPA falls below 1.80 after previously being on probation or after previously being required to apply for re-admission are failed students and must withdraw from the programme.

16.2.22 ACADEMIC RE-EVALUATION

I.General

1. Two alternative methods for handling academic re-evaluation are set out below. The first requires the appointment of a mod-

erator for each course in a department. The second requires the appointment of a reader to each application. Each chairman shall decide which system is more suitable for his own department, and so inform the dean of his faculty.

2. Nothing in these regulations shall be taken to proscribe the right of a faculty member or chairman of a department to review a grade upon request by a student before formal application for a re-read or re-evaluation is made.

3. The term "re-read" refers to the process whereby a student appeals against a grade received *within* a course, i.e., for a research paper, or examination. The term "re-evaluation" refers to the process whereby a student appeals against his final grade in a given course.

II. Appointment of Course Moderators

1. A moderator shall be appointed by the department chairman for each course the department offers.

2. The moderator for a course will normally be named from within the university, but should have no responsibilities in the presentation of the course. However, there may be special circumstances which require the appointment of a moderator from outside.

3. To cover adequately multi-sectional courses it may be necessary to appoint several moderators.

4. The responsibilities of the moderator shall be:

(a) To be aware of the objectives of the course and its evaluation procedure prior to its presentation;

(b) To be aware of the formal examination paper(s) of the course in the event of a candidate applying for a re-read in it;

(c) To attend all formal oral examinations in the course;

(d) To re-read all work representing a major part of the final mark in the course in the event of a candidate applying for a re-read in it.

III. Appointment of Readers

1. A reader shall be appointed by the chairman of the department on the receipt of an application for a re-read. He will normally be named from inside the university, but may be named from outside.

2. The reader shall make himself aware of both the nature and structure of the course and the characteristics of the particular examination.

3. Should the chairman of the department be the instructor of the course, he shall be replaced by the dean.

IV. Re-Reading and Re-Evaluation Procedures

1. The following procedures shall govern the re-reading of examinations whether final or supplemental and the re-evaluation of grades;

2. Any application for a re-read or re-evaluation must be made to the Registrar.

3. An application must be made within 14 days of the release of the grade in question. This delay may be extended in particular cases by the Registrar, but it shall not be extended unless the person applying for a re-read could not reasonably have acted within fourteen days.

4. The application must be submitted to the Registrar's office, and should be presented on the special form obtainable there. It must specify the nature of the re-read or re-evaluation claimed — e.g. for examination or course, and the grounds for the application. The Registrar may require further explanation from the student.

5. The application must be accompanied by a fee of $10.00, which is refundable if the grade is raised.

6. The Registrar shall file the application, and send a copy to the chairman of the department concerned so that the re-read or re-evaluation can be carried out.

7. The chairman of the department shall then have the re-read or re-evaluation carried out by the course moderator if one has been appointed and is available, or by a reader if a moderator has not been appointed or is unavailable.

8. The re-read or re-evaluation shall be carried out privately, not in the presence of the applicant or his representative.

9. When the moderator or reader has completed the re-read or re-evaluation he shall return the work that he has re-read or re-evaluated to the chairman with his own grade.

10. If the moderator or reader agrees with the original grade, the chairman shall return the paper or papers to the Registrar with a statement to this effect.

11. If the moderator or reader changes the grade, the change should be agreed to by both the instructor who gave the original grade and the chairman before the material is returned to the Registrar. If the instructor is not available, the agreement of the chairman shall suffice.

12. If the original instructor disagrees with the change, the decision as to what grade is to be given devolves on the chairman of the department, who will indicate this fact in his statement to the Registrar.

13. The Registrar shall inform the applicant of the re-read or re-evaluation decision.

14. A grade can be either raised or lowered by a re-read or re-evaluation.

15. The re-reading or re-evaluation procedure should normally be completed within 21 days of the receipt of an application.

16. Either a moderator or a second member of faculty must be present at any formal oral examinations. Application for a re-read or re-evaluation shall be referred to the moderator or the member of faculty who was present at the oral.

17. There is no further appeal once a re-read or re-evaluation decision has been rendered.

18. An application for re-evaluation of a course grade may be refused if the student has not either handed in two copies of all term papers to the instructor or left the original papers with him.

19. Examination scripts shall be retained on the university premises for a period of six months from the close of the examination period.

20. Department chairmen are responsible for ensuring that examination scripts are available for re-reading, and that an appropriate person is always available to carry out

re-reads within the time period established.

V. Notes

1. In order to minimize the number of re-read or re-evaluation applications, any faculty member who has papers graded by a teaching assistant shall personally check all failing papers as well as papers close to the borderline for grades or classes before submitting the results.

2. The student request committees of the various faculties shall not be involved in re-reads or re-evaluations.

16.2.23 CONDUCT DURING EXAMS UNDERGRADUATE

I. General

1. The candidate taking any form of examination shall not use or attempt to use any material in any form except that which is expressly authorized by those conducting the examination.

2. A candidate shall not speak or otherwise communicate with another candidate or with any person other than the invigilator(s) or instructors except when such communication is expressely authorized by those conducting the examination.

3. Every examination paper shall expressly indicate the materials that a candidate is permitted to have with him during the examination, such as text books with notations, text books without notations, slide rules, etc.

4. Every examination paper shall expressly indicate the length of the examination and special conditions, if any, such as permission for students to work together, etc.

5. The invigilators or other persons conducting an examination may at their discretion transfer a candidate from one location in the examination room to another.

6. It is the duty of invigilators or of other persons conducting an examination to report to the Registrar in writing any apparent instance of cheating as defined in section *II*.1 below.

7. Where the word ''examination'' is used in these regulations it shall be taken to mean ''examination, test or similar evaluative exercise''.

II. Cheating

1. Cheating means any dishonest or deceptive practice relating to an examination, and more particularly, but not restrictively, includes the following:

(a) Making use of any book, paper, script, writing, drawing or anything else not expressly authorized by those conducting the examination;

(b) Communicating during an examination with any person other than one of those conducting the examination for the purpose of obtaining for oneself or providing to another candidate unauthorized assistance in the taking of the examination;

(c) Attempting to do any of the above;

(d) The possession of any unauthorized book, paper, script, writing, drawing or anything else not expressly authorized by those conducting the examination will be accepted as proof of attempting to cheat.

2. A candidate who is to be charged with cheating during an examination shall be so informed by one of the persons conducting the examination, and his taking of the examination shall be suspended forthwith. One of the persons conducting the examination shall take the candidate's examination book, where there is one, as well as any othe evidence relating to the charge, and the candidate shall be required to leave the examination room immediately.

3. As soon as is reasonably possible after examination, the evidence shall be delivered to the Registrar, who, if he deems it appropriate to proceed, shall see that a written charge is prepared and transmit it to the dean of the faculty in which the candidate is registered.

4. The charge shall be made in writing, and must be dated and signed by the person who is making it. The allegations must be stated therein in such a way as to inform the candidate with precision what allegations are being made against him.

5. The dean shall send, as soon as is reasonably possible, a copy of the charge to the candidate, and shall inform the candidate of the procedures and sanctions relating to the charge. The dean shall also ask the candidate, in writing, whether he admits or denies the charge.

6. The candidate shall admit or deny the charge, in writing, within 14 days of the date of its mailing to him at the last address given by him to the university. This delay may not be extended unless the candidate could not reasonably have acted within the 14 days.

7. Where the candidate admits the charge, the Dean shall apply one of the sanctions set out in *II*.14 below.

8. Where the candidate does not admit or deny the charge as provided above, the dean himself shall conduct a hearing on the charge.

9. Where the candidate denies the charge, the dean shall offer him a choice of:

(a) a hearing by the dean himself, or;

(b) a hearing by a committee of three persons, selected by the dean from a panel nominated by the candidate's faculty council.

Where the candidate chooses the latter form of hearing, he may choose that the committee consist of three faculty members, or two faculty members and one student, or one faculty member and two students. Where he does not make this choice, the dean shall make it.

10. The candidate has the right to be present at the hearing on the charge.

11. The decision of the dean or of the committee, as the case may be, shall be in writing and shall be a reasoned one. A copy of the decision shall be sent to the candidate.

12. The candidate and the Registrar shall have a right of appeal to Senate either against the decision of the dean or the committee, as the case may be, or against the sanction imposed. A notice of such appeal shall be made in writing to the Secretary of Senate within 21 days of the decision referred to above in the case of the candidate, and within 7 days in the case of the Registrar. These delays may be extended in exceptional cases by Senate.

13. The appeal shall be heard and decided in the manner deemed most appropriate by Senate.

14. Where a candidate admits or is found

to have cheated the dean shall impose one of the following sanctions:

a. The imposition of a failing grade for the course related to the examination in which the cheating occured, ineligibility to write a supplemental examination in that course, and the obligation to take and pass the equivalent of one six credit course in addition to the total number of credits required for the programme in which the candidate is registered.

b. The sanction provided in subsection (a) above and the obligation to take and pass the equivalent of a further one, two, or three six-credit courses in addition to the total number of credits required for the programme in which the candidate is registered.

c. The sanction provided in subsection (a) above, together with loss of all credits for courses taken during the year in which the cheating occured and suspension from the university for the remainder of that year.

d. The sanction provided for in subsection (c) above and suspension for an additional period of not more that one year.

e. Loss of all credits for courses taken during the year in which the cheating occured and expulsion from the university.

A year shall begin on September 1st and end on August 31st if the charge relates to an act occuring in the winter session, and from June 1st to May 31st if the charge relates to an act occuring in the summer session.

15. Should a candidate either admit or be found to have cheated as provided above for the second time he shall be expelled from the university.

16. A sanction of suspension or expulsion as provided above is subject to confirmation by the Rector of the university.

17. Should a charge against a candidate not be proceeded or upheld, the dean of the candidate's faculty and the Registrar shall take the appropriate steps for the candidate to be evaluated.

18. Wherever reference is made above to a dean or any other official of the university, and the dean or other official is unable to exercise his functions, the person who is replacing him shall carry out those functions.

16.2.24 PLAGIARISM UNDERGRADUATE

I. General

1. Plagiarism, for the purpose of these regulations, includes the presentation or submission by a student of another person's work as his own.

II. Procedures and Sanctions

1. If an instructor has reason to believe that a student has committed plagiarism, as defined above, he shall immediately inform the student concerned and discuss the circumstances with him.

2. After such discussion, the instructor shall:

(a) decide that no further action is necessary, or;

(b) require that the work be resubmitted with appropriate changes, or;

(c) give the student an 'R' grade in the course for which the work was done, or;

(d) refer the matter to the chairman of the department.

3. If the instructor's decision is that set out in 2 (a) or 2 (b), the matter shall be considered closed. If the decision is that set out in 2 (c), the student may appeal it to the chairman of the department.

4. Should a student appeal a decision as set out in 2 (c), the chairman of the department shall:

(a) uphold the award of the 'R' grade, or;

(b) cancel the 'R' grade and decide no further action is necessary, or;

(c) cancel the 'R' grade, and require that the work be resubmitted to the instructor with appropriate changes.

The chairman's decision shall be final.

5. If the matter is referred to the chairman of the department, as set out in 2 (d), and an appropriate departmental committee exists, he shall refer it to that committee.

6. If an appropriate committee exists, the committee shall review all the circumstances with the instructor and the student, and shall:

(a) decide that no action is necessary, or;

(b) require that the work be resubmitted with appropriate changes, or;

(c) decide that a formal charge shall be made against the student.

If the committee's decision is that set out in 6 (a) or 6 (b), the matter shall be considered closed.

7. If the matter is referred to the chairman of the department as set out in 2 (d) and no appropriate departmental committee exists, the chairman shall review all the circumstances with the instructor and the student, and shall:

(a) decide that no action is necessary, or;

(b) require that the work be resubmitted with appropriate changes, or;

(c) decide that a formal charge shall be made against the student.

If the chairman's decision is that set out in 7 (a) or 7 (b), the matter shall be considered closed.

8. If either the appropriate committee or the chairman of the department decides that a formal charge shall be made against the student, the chairman shall send that charge to the dean of the faculty in which the student is registered.

9. The formal charge to the dean shall be made in writing, and be dated and signed by the chairman of the department. The allegations must be stated there in such a way as to inform the student with precision what allegations are being made against him.

10. In the event that the instructor is himself chairman of the department, the dean of his faculty shall appoint another member of the department to act in his place.

11. The dean shall send, as soon as is reasonably possible, a copy of the charge to the student and shall inform the student of the procedures and sanctions relating to a formal charge. The dean shall also ask the student, in writing, whether he admits or denies the charge.

12. The student shall admit or deny the charge, in writing, within 14 days of the date of its mailing to him at the last address given by him to the university. This delay may be extended in exceptional cases by the dean, but it shall not be extended unless the student could not reasonably have acted within the 14 days.

13. Where the student admits the charge, the dean shall apply the sanction set out below.

14. Where the student does not admit or deny the charge, the dean himself shall conduct a hearing on the charge.

15. Where the student denies the charge, the dean shall offer him a choice of:

(a) a hearing by the dean himself, or;

(b) a hearing by a committee of three persons, selected by the dean from a panel nominated by the student's faculty council.

Where the student chooses the latter form of hearing, he may choose that the committee consist of three faculty members, or two faculty members and one student, or one faculty member and two students. Where he does not make this choice, the dean shall make it.

16. The instructor and the student have the right to be present at the hearing on the charge.

17. The decision of the dean or of the committee, as the case may be, shall be in writing and shall be a reasoned one. A copy of the decision shall be sent to the instructor and the student.

18. The student shall have the right of appeal to Senate against the decision of the dean or of the committee, as the case may be. A notice of such appeal shall be made in writing to the Secretary of Senate within 21 days of the decision referred to above. This delay may be extended in exceptional cases by Senate.

19. The appeal shall be heard and decided in the manner deemed most appropriate by Senate.

20. A student who admits that he has committed plagiarism or is found to have committed plagiarism as set out in a charge under paragraph 9 shall be expelled, or suspended from the university for the remainder of the year and not more than one additional year, such year beginning on September 1st and ending on August 31st if the charge relates to an act occurring in the winter session, and from June 1st to May 31st if the charge relates to an act occurring in the summer session, or have imposed any of the lesser penalties available to the instructor as set out in 2 (b) or 2 (c). All credits for courses taken during the full year as described herein shall be cancelled.

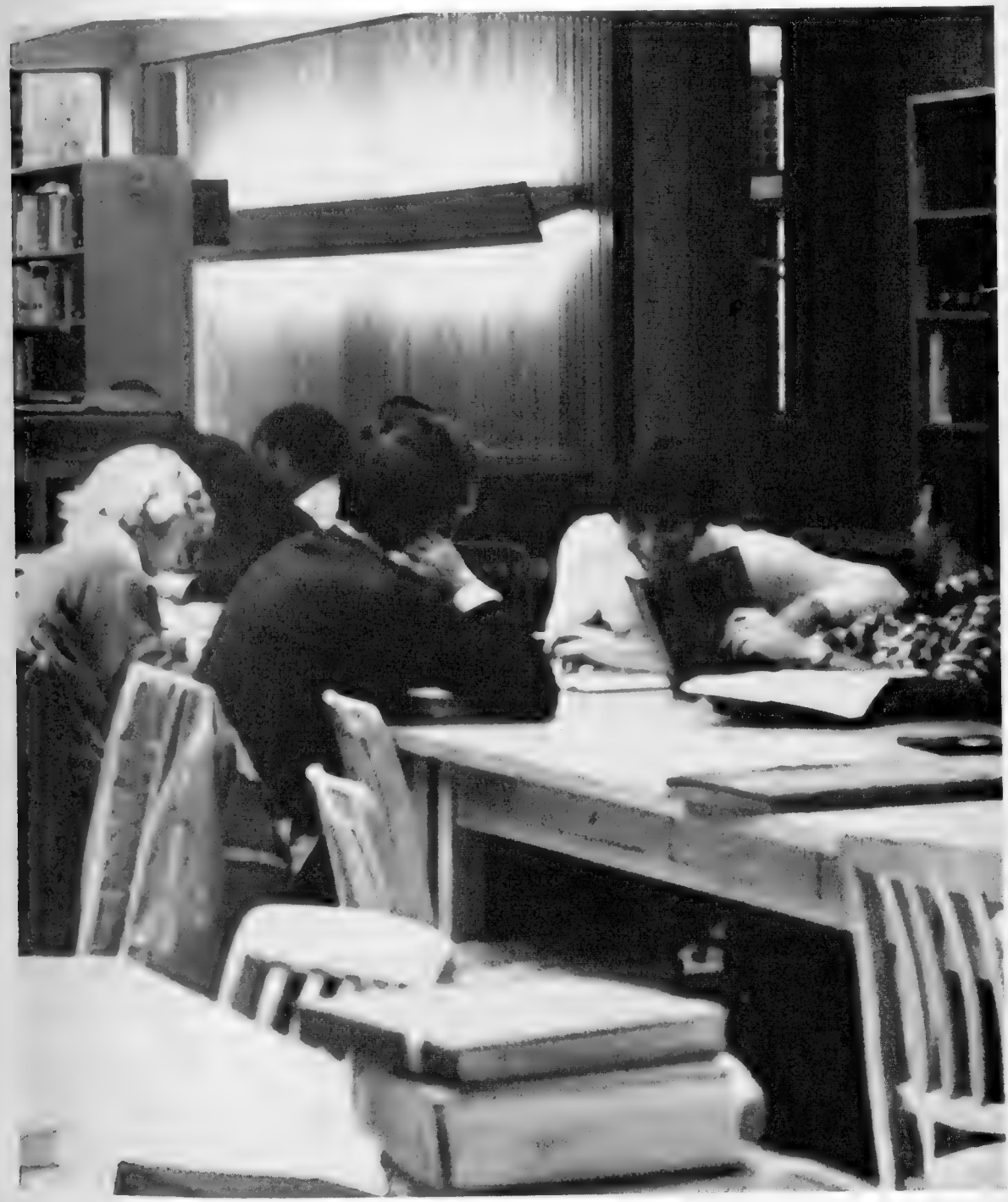
21. Should a student either admit or to be found to have committed plagiarism as set out in a charge under paragraph 9, for the second time, he shall be expelled from the university.

22. A sanction of suspension or expulsion as provided above is subject to confirmation by the Rector of the university.

23. Should a charge of plagiarism as set out under paragraph 9 against a student not be upheld, the dean of the student's faculty shall take the appropriate steps to have the work that was the subject of the charge evaluated.

24. Wherever reference is made above to a dean or any other official of the university, and the dean or other official is unable to exercise his functions, the person who is replacing him shall carry out those functions.

18 Student Services



18.1 Student Services Loyola Campus

Dean of Student Office
DEAN A. AUDET

The Division of Student Services is that dimension of the Campus staff who work on a day-to-day basis, primarily with:

— Specialized Services to Students
— Learning Opportunities Outside the Classroom
— Campus Life in General

The objective of the Student Services Staff is to work with others in making life on campus an educationally rewarding, exciting and enjoyable experience.

People in Student Services are not teachers or students or administrators "per se". They *are* counsellors, community workers, doctors, nurses, programme consultants, organizational resource people, and educators in a broad sense. Their approach in their work is to *offer* their skills and experience to those who need and want their help.

18.1.1 PROGRAMME DEVELOPMENT OFFICE

The Programme Development Office is the compartment of Student Services whose sole objective is to create events and opportunities that have substantial learning value outside the classroom. While the staff of the Programme Development Office initiates and organizes some of its own programmes and events, the staff is available to help other groups launch activities.

In the past year some of the programmes the Programme Development Office was involved in were: Ciné Participation, Sexuality Week, Lacolle programmes on and off campus, Career and Life Planning Workshops, Take Stock and various events during Orientation.

The Programme Development Office is located in the Dean of Students Office, Administration Building Room 135.

18.1.2 GUIDANCE CENTRE

J. HALE

Individuality is a key word at Loyola, and all students are encouraged to use their university life as a time to get to know themselves better, and to develop their own individual potential to the fullest. With this aim in mind, the Guidance Centre is geared to offer assistance in many forms, and for many reasons.

What kind of person are you?
Are you relating to people to your satisfaction?
What are your thoughts about a career?
Is graduate work a possibility?
How productive are your study habits?
Could you improve your reading techniques?
Could psychological tests help you?

There may be many questions that the Guidance Centre can help you answer. There may be many problems that can be minimized by discussing them with an understanding counselor. You can do so with the understanding that everything between you and your counselor is strictly confidential. You don't need to have a problem to come to the Centre. It is your Centre. You are invited and encouraged to make the fullest use of its facilities.

The Guidance Centre is in the Centennial Building at 6935 Sherbrooke Street West.

18.1.3 HEALTH SERVICES

M. WHEELER

Located in the Centennial Building across the hall from the Guidance Centre, Health Services is open to all students for confidential health care, information and advice from 9 a.m. to 5 p.m. Monday through Friday. There are three registered nurses and eight doctors of different specialties who come in at varying times throughout the week. Drop in or call local 480 any time—it could prove useful.

18.1.4 FOREIGN STUDENTS

B. COUNIHAN

Foreign Students' Insurance: Students who are neither Canadian citizens nor landed immigrants are not eligible for the provincial medical program. The high cost of hospital care in Québec has prompted Loyola to arrange for an insurance policy which covers hospital expenses up to $5,000.00 incurred as the result of accidental injury or an illness. The premium for this policy is $45.00; it is included in your fees. This policy is required of all Foreign Students. Students from the United States who have comparable coverage at home may be exempted. For details about the coverage or exemption, contact the Foreign Student Advisor at Student Services.

Foreign Students Finances: It is most important for a student to have sufficient financial resources to cover his total expenses for at least one year of study. As you are no doubt aware, immigration regulations normally do not permit student visa holders to accept any form of employment during the academic year. A guideline of expenses which a student may expect to incur, in addition to his tuition fees, follows: (It should be noted that these figures can be considered minimal).

Books and Supplies	$125.00
Lodging	$700.00
Food	$500.00
Insurance	$ 50.00
Clothing	$175.00
Miscellaneous	$250.00
Transportation	$100.00
Plus Tuition Fees	
Cost for one year (approximately)	$2000.00

These costs have been calculated on the value of Canadian currency and cover only the academic year.

Overseas students are expected to present evidence to immigration authorities that they have adequate funds for their studies in Canada.

Loyola or the Canadian Government does not give financial assistance to overseas students.

Foreign Students English Requirements: All classes at Loyola are conducted in English. Students are expected to have sufficient facility in the use and understanding of the English language to be able to handle his or her programme. No exceptions can be made for students whose fluency is poor; this would probably entail "slowing down" the normal progress of the class. Please be aware of this before making a commitment with us.

18.1.5 RESIDENCE LOYOLA CAMPUS

Concordia University does not require first year, or students under 21 years of age to live on campus. On campus accommodations are available to approximately 250 day division students. The facilities are versatile by division and can house students in a traditional dormatory style or apartment-suite style room; co-ed or single sex floors; and special living groups can be accommodated.

While every effort is made to meet students' requests for single rooms, roommates, or particular hall, assignments are made as space allows. Students applying are advised that rooms on campus are very limited and acceptance to the University does not guarantee admission to the residence. Separate application for on-campus housing must be made to the Director of Residence.

Off Campus Housing

Many students choose, or are forced, due to a lack of space on campus, to live in an apartment or home in the campus vicinity. All students seeking information about apartment and home listings in the community, legal aid, and other services available should contact the Residence Office.

All inquiries should be made to:
Director of Residence Life

Concordia University, Loyola Campus
Room 101, Hingston Hall
7141 Sherbrooke St. West
Montreal, Quebec
H4B 1R6

Residence Fees Loyola Campus

General: Rates for rooms are the same at both Hingston and Langley Hall. These rates do not include meals. Meals may be contracted for separately.

Residence:	Single Rm.	Double Rm.
Room	$693.00	$590.50
Activity Fee*	18.00	18.00
Damage & Development Fee*	15.00	15.00
Damage Deposit (Refundable)	50.00	50.00
Total	$776.00	$673.50

* Payable at Registration

A room deposit of $50.00 must accompany each application and will be deducted from the payment due on entrance. The $50.00 deposit serves as indication for the University that you are a serious applicant for Residence. It does *not* guarantee the student a room. **Please do not assume that you are accepted into residence until you have received a letter of acceptance from the housing office.**

Room deposits will be refunded on request, if the student is not accepted, or cancels the room reservation by August 15. Students cancelling after the August 15 deadline will forfeit their $50.00 deposit.

The room contract covers the rental of linen, blankets, pillows and local telephone service.

The University reserves the right to place the student in whatever room appears to be in the best interests of the student's programme as a whole, but careful consideration will be given to expressed preferences.

No student will be permitted into residence before settlement of his or her account has been made. For this purpose, a receipt covering at least the first term must be shown to the Director of Residence.

Fees do not cover the Christmas holidays. Students who intend to remain in residence over the holidays are required to apply to the Director of Residence by December 1st. There is an extra charge made to remain in residence at this time.

Residence fees may be paid in two installments. The first installment covering the first term, including compulsory fees, must be paid at registration. The second must be paid before January 10.

In cases where cheques are returned to the University marked "Not Sufficient Funds" there will be a $5.00 charge.

— A $15.00 surcharge will be added to all unpaid fees as of January 15th. Postdated cheques will not be accepted.

All residence fees are payable in Canadian funds or the Canadian equivalent, and cheques should be made payable to Concordia University.

The University reserves the right to make changes without notice in the published scale of fees, if circumstances so require.

To ensure favourable consideration of your application, it is recommended that you apply before June 1, 1975.

Meal Plan Loyola Campus

Meals may be contracted for on a yearly basis at a cost of approximately $540.00 for two meals a day, five days a week (lunch and dinner) and $695.00 for three meals a day. Several other plans are in effect and the student may choose the one most suited to his

needs. He may also prefer to pay as he goes on an 'a la carte' basis anywhere on campus. Meal plan tickets are honoured at both the Hingston Hall Dining Room and the Campus Centre.

18.1.6 FINANCIAL AID

F. HAFFEY

Financial Aid for students at Loyola is administered by the Director, Financial Aid.

This office exists solely to help students find the financial aid available to them from all sources; advise students on the norms of eligibility or help them with any budgetary problems they might wish to discuss.

The Financial Aid Office is in Room A-126. Telephone: 482-0320, ext. 349.

18.1.7 SCHOLARSHIPS

A scholarship is awarded in recognition of outstanding academic achievement. A scholarship winner is given the title of "LOYOLA Scholar".

If a student holding a scholarship decides to change faculty, he will retain the scholarship only on condition that he receives the approval of the Scholarship Committee.

No student may hold more than one scholarship from Loyola at any one time.

Any student holding a full-tuition scholarship may take such additional courses as are approved by his/her Department Chairman and Dean during the regular academic year at no extra charge provided that he/she maintains his/her academic standing including these extra courses. This excludes courses taken in the summer session. (Motion 73033, passed at the Senate meeting, March 29/73).

Loyola Scholarship Programme is currently under review. For more information on Loyola Entrance Scholarships, contact the Director of Financial Aid, A-126.

Susan Langley Scholarships

Endowed scholarships established by Mr. and Mrs. M.J. McCormick in memory of the late Susan Langley; offered to University I students with high standing who do not qualify for Loyola Entrance Scholarships. Non-renewable. Value — $100. Applications with all required documents must be forwarded to the Director of Awards prior to March 1st.

18.1.8 ENDOWED & GIFT SCHOLARSHIPS

The Bartlett Memorial Scholarship, Value $100.00

The Bartlett Doherty Memorial Scholarship, Value $100.00

The Gasson Memorial Scholarship, Value $100.00

The Jones Memorial Scholarship, Value $100.00

The McCarthy Memorial Scholarship, Value $100.00

The McMahon Memorial Scholarship, Value $100.00

The O'Bryan Memorial Scholarship, Value $100.00

The O'Dowd Memorial Scholarship, Value $100.00

The Principal's Scholarship, Value $100 (3)

The J.S. O'Neil Scholarship, Value $100.00

Annual Gift Scholarships

The Charles Brown Memorial Scholarship, Value $100.00

The Mrs. Charles Brown Memorial Scholarships, Two, Value $100.00

The Gutelius Memorial Scholarship, Value $100.00

The Knights of Columbus Council 284 Scholarship, Value $100.00

The State Council, Knights of Columbus Province of Quebec Scholarship, Value $100.00

Endowed Scholarships

The Lilly F. Barry Scholarships, Three, Value $100.00

The Ursula Carling Scholarships. Two endowments from the estate of the late Mrs. Ursula Carling, Value $100.00

The Cloran Memorial Scholarship, Value $100.00

The Collins-Heffernan Memorial Scholarship. From the *Mary Ellen Heffernan Bursary* and the *Nelson Collings Scholarship*, Value $100.00

The Cuddy-Standford Memorial Scholarship. From the John N. Cuddy Scholarship and the Standford Memorial Scholarship. Value $100.00

The Dowling-Moriarty Scholarship. From the estate of the late Francis J. Dowling and of the late Mrs. E. Stowell, widow of the late John Moriarty. Value $100.00

The Mrs. F.J. Duckett Scholarships. From the estate of the late Mrs. F.J. Duckett. Value $100.00

The Friends of Loyola Scholarship. From funds endowed from the James Corcoran Scholarship, the Rev. William Doherty Scholarship, the Gregory O'Bryan Scholarship, and from the funds given by the Student's Penny Scholarship. Value $100.00

The Arthur Halley Memorial Scholarship. Endowment from F. Halley, St. John's Newfoundland in memory of his son Arthur, graduate of the Pre-Medical Class of 1946, Magna Cum Laude, who died on the eve of convocation. Value $100.00

The Mr. and Mrs. Thomas William Kavanaugh Memorial Scholarship. Donated by the Rev. Thomas W. Kavanaugh. Value $100.00

The Loyola Sodality Scholarship. Funds from the Sodality Scholarship and from the Loyola Scholarship Club Association Bursary. Value $100.00

The Mahoney-Murphy Memorial Scholarship. From the Mother Ellen Memorial Scholarship and the John Walsh Murphy Memorial Scholarship. Value $100.00

The Kenneth J. McArdle Memorial Scholarship. Donated by Mrs. Mary McArdle as a tribute to the memory of her late husband Kenneth J. McArdle. Value $100.00

The St. Ignatius Parish Scholarship. Money collected and presented to the St. Ignatius Men's Association and originally known as the Coronation Arts course Scholarship. Value $100.00

The Sharp-O'Reilly Scholarship. Funds from the Alice M. Sharp Scholarship, and from the Winnifred O'Reilly Memorial Bursary. Value $100.00

The James Weber Memorial Scholarship. Awarded in memory of a member of the Class of 1970.

The Judith Roman Memorial Scholarship Fund: A limited number of scholarships are available to qualified students through the generosity of Mr. and Mrs. John Z. Roman.

18.1.9 SCHOLARSHIPS OFFERED BY COMPANIES' ASSOCIATIONS AND SOCIETIES

Bank of Nova Scotia Bilingual Exchange Scholarships: Six annual one-year undergraduate and graduate awards are available, three to French-speaking candidates and three to English-speaking candidates. Undergraduate awards are for $1,500.00 tenable in the second to last year of a first university degree program. Graduate awards are for $3,000.00 and graduate students will be expected to outline their proposed programs of study. English-speaking winners may attend any Canadian French-speaking university or college and French-speaking winners may attend any Canadian English-speaking university or college provided it is a member, or federated with, or affiliated to, a member of the Association of Universities and Colleges of Canada. Apply to the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario. Completed applications must be sent to the above address to arrive not later than March 1st.

Building Products of Canada, Ltd. Higher Education Awards for Children of Employees and Pensioners.

Canadian Forces Benevolent Funds: The Canadian Forces Benevolent Funds consider applications from veterans for bursaries on behalf of their sons and daughters who are full-time students. Apply to the nearest local office of the Department of Veterans Affairs.

Celanese Canada Limited: Several entrance scholarships in any course leading to a baccalaureate degree offered to the children of employees or annuitants of Chemcell or its subsidiary companies. Further information and application forms should be requested directly from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario. Completed forms in triplicate are to be sent directly to the same address to arrive not later than June 1st.

Commonwealth Scholarships: Under a plan worked out at the Commonwealth Education Conference at Oxford in 1959, responsibility is shared between the Canadian Commonwealth Scholarship and Fellowship Committee and the External Aid Office to enable an increased number of students to share in the wide range of educational resources available through the Commonwealth. An undergraduate award is made for the period required to enable the student to obtain his degree. For information, consult: The Canadian Commonwealth Scholarship and Fellowship Committee, c/o Association of Universities and Colleges of Canada, or: The Director General, External Aid Office, both located at: 151 Slater St., Ottawa, Ontario.

Consumers Glass Company Limited University Education Awards Plans: Open to children or wards of employees and retired employees of Consumers Glass Company Limited for a full-time course of study in any Canadian university or college recognized by the Association of Universities and Colleges of Canada. Value $750.00 per year for a maximum of four academic years, or until a first degree is obtained, whichever occurs first. Awards are automatically renewed provided the students establish continuing eligibility and successfully complete the preceding academic year. Further information and application forms which must be submitted by June 30th may be obtained from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont.

Continental Can Company Limited (Canadian Scholarship Plan): The Carle C. Conway Scholarship is offered to the children or grandchildren of the Company's employees. Application forms should be requested from the plant manager or district sales managers. The completed forms, in triplicate, are to be sent to the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario.

The Continental Insurance Companies (Canadian Scholarship Plan): University entrance scholarships in courses leading to baccalaureate degrees may be applied for by the natural or adopted children, step-children or legal wards of one of the Continental Companies operating in Canada. Further information and application forms may be obtained from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario. Applications must be sent directly to the same address no later than June 1st.

Government of Quebec Department of Natural Resources Scholarships: The Department of Natural Resources of Quebec offers bursaries to enable students to take a university degree in geology in the Province of Quebec. Further information may be obtained from the Secretary, Scholarship Committee, Quebec Department of Natural Resources, Parliament Buildings, Québec, Québec. Also open to graduate students in Metallurgy, Mining, Engineering and Geology.

Gulf Oil Canada Limited: Several university entrance scholarships are awarded annually to the children, natural or adopted, of employees and annuitants of Gulf of Canada and its subsidiary companies in Canada. Further information and application forms should be requested from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario. Completed applications, in triplicate, are to be sent directly to the same address to arrive not later than June 1st.

Imperial Oil Higher Education Awards: Imperial Oil Limited offers annually free tuition and other compulsory fees to all children or wards of employees and annuitants who proceed to higher education courses. The courses may be taken at any Canadian university or other approved institution of

higher learning. Each award is tenable until the attainment of a first degree or for a maximum of four years. To be eligible a student must attain an average mark of 70% or higher in the appropriate secondary school examinations in the subjects required for admittance to the approved institution, or must have attained an average of 70% or more in a college year upon which application is based. Further information and application forms may be obtained from The Secretary, Committee on Higher Education, Imperial Oil Limited, 111 St. Clair Avenue West, Toronto, Ontario.

Iron Ore Company of Canada (Scholarship Plan): A limited number of entrance scholarships for study towards a first degree are offered to the children or wards of employees or annuitants or decreased annuitants of the parent or subsidiary companies. Further information and application forms should be requested from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario. Completed applications, in triplicate, are to be sent directly to the same address to arrive not later than June 1st.

Quebec Cartier Mining Company: A limited number of four-year or first degree entrance scholarships are offered to candidates whose parents or legal guardians have been employees of the company for at least four years. Further information and application forms may be obtained from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ont.

R.C.A.F. Benevolent Fund: The Royal Canadian Air Force Benevolent Fund has made provisions for loans for the benefit of former R.C.A.F. personnel or their dependents. Apply to R.C.A.F. Benevolent Fund, 685 Cathcart St., Montreal, Que.

Royal Canadian Engineers Memorial Scholarships: Scholarships of up to $500.00 each are offered annually to students, both male and female, who are attending any educational course of study or practical training course beyond secondary school level. Scholarships are awarded on the basis of merit and need to the most suitable candidates from among those who apply. To be eligible, a student must be the child or grandchild of a person who served in any rank in any of the following components of the Canadian Armed Forces: a) A Royal Canadian Engineer component of the Canadian Army during World War I, World War II, or under the United Nations in Korea; b) The Royal Canadian Engineers in the Canadian Army Regular or Permanent Force or Militia or Non-Permanent Active Militia, for not less than three continuous years; c) The Military Engineers Branch of the unified Canadian Armed Forces for not less than three continuous years after the first day of February 1966. Apply: Deputy Chief of Construction, Military Engineering Advisor, DCC-NEA Building No. 105, Canadian Forces Headquarters, Victoria Island, Ottawa, Ontario.

Texaco Canada Merit Scholarship Programme: Several entrance scholarships to provide up to a maximum of the first four years of undergraduate study may be applied for by dependent children, natural or legally adopted, of employees or annuitants or of deceased employees who died while employed by Texaco Canada. Applications forms are obtainable by an employee from his supervisor. Completed applications, in triplicate, must be sent to the following address to arrive not later than June 1st: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater St., Ottawa, Ontario.

18.1.10 GOVERNMENT AID

Government Loan Plans: In all the Canadian Provinces a basic qualification for financial aid is that the applicant be a Canadian citizen or landed immigrant with one year's residence and domicile in the province to which he is applying. This would be the province where his/her parents make their home.

The Province of Quebec: The Province of Quebec has an extensive program of student loans and bursaries available to students. For applications contact the Director, Financial Aid.

Physically Handicapped: Students in any faculty who are Canadian citizens and have been resident and domiciled in Quebec for two years, may apply for an outright grant if they have suffered from poliomyelitis, tuberculosis, certain forms of cardiac trouble, or some other physical disability. Apply, Director, Financial Aid.

Ontario: Apply to the Director, Financial Aid.

New Brunswick: Apply to the Department of Youth and Welfare, Fredericton, New Brunswick.

For the provinces of Alberta, British Columbia, Manitoba, Newfoundland, Nova Scotia, Prince Edward Island and Saskatchewan, write to the Provincial Department of Education.

Children of War Dead (Education Assistance) Act: Under this Act fees up to $800.00 and monthly allowances are provided for children of Canadian war veterans whose death was attributed to military service in World War I, World War II, or the Korean War. Apply to the Superintendant of Welfare Services at the nearest DVA District Office.

United States Students: Due to new statutory regulations required by the Education Amendments of 1972 all parents of students who wish to apply for Federal interest benefits must file a Parent's Confidential Statement with the College Scholarship Service, Box 176, Princeton, New Jersey 08540. Request that it be sent to Loyola College, CSS Code No. 0932.

Maine and Oregon — Apply through the United Student Aid Fund, form 1070, available at your bank.

Students from other states — Apply to the Higher Education Assistance Corporation. Applications are available at your bank.

Due to the tight money situation, it is essential that you apply to the bank where your parents have an account, as early as possible.

Note: Applications for Government aid should be made as soon as possible. Do not wait for registration.

18.1.11 LOAN FUNDS

Through the generosity of the Birks Family Foundation, the B'nai B'rith Hillel Foundation and the National Council of Jewish Women, a certain amount of money has been placed with Loyola to help students in an emergency situation. Available, interest free, to all students who demonstrate need and responsibility. Apply to Director, Financial Aid.

Loyola Alumni Student Loan Fund: The loan fund exists to aid students who are in financial difficulties. Because of limited resources, the trustees of the loan fund will consider loans to students who: 1) have been successful in their set of final examinations at Loyola; 2) are prepared to repay the loan by October 1st, 1975. Apply to Director, Financial Aid application must be made before January 1, 1975.

18.1.12 BURSARIES

A bursary is a sum of money given to a student to assist him financially in the continuation of his studies.

Due to the greatly increased demand for financial aid, all students must apply first to their own province and/or state and accept maximum loan and bursary aid from these sources. Thus, Loyola funds cannot normally be used to compensate for a student's failure to apply for and accept the maximum government assistance available to them. If a student needs more than this maximum government assistance, a bursary may be granted.

The basic principle in awarding financial aid is that the primary obligation to pay for an education rests with the students and their parents. This means that a student is expected to have savings from his summer employment and that parents must contribute according to their ability.

The Financial Aid Office exists solely to assist students and to help them find financial aid should they need it.

A bursary will take the form of a credit to the Student's tuition account. Ordinarily, bursaries will not be awarded to students with less than a 50% overall average.

Applications for bursaries should be made as early as possible. Apply to the Director, Financial Aid.

The IBM Canada Bursaries: Donated by the IBM Company as part of the IBM Canada Bursary Program. Awarded annually to needy undergraduates in any year and in any faculty who are in good academic standing. Number: two. Value $500.00 each. Apply as soon as possible to the Director, Financial Aid.

Touche Ross & Co. Bursary: Awarded annually to a student who is completing his third year and will be entering his final year, majoring in accountancy in the Faculty of Commerce, and who intends to pursue the qualification of Chartered Accountant. Number: one. Value: $200.00

The Birks Family Foundation Bursaries: "The Birks Family Foundation has established a plan of annual contributions to the Student Aid Fund of recognized Canadian Universities for the creation of the Birks Family Foundation Bursaries.

The Bursaries are awarded by the Foundation on the recommendation of the University Scholarship Committee and are not restricted to faculty or year and may be renewed. The number and amount of such awards may vary annually, depending upon the funds available for the purpose from the Foundation."

B'nai B'rith Hillel Foundation: A limited number of bursaries are available. Amount of each bursary granted from this fund may vary according to the need of the deserving student in any year of any faculty. Apply to the Director, Financial Aid.

National Council of Jewish Women of Canada, Montreal Section, Bursaries: A limited number of bursaries are awarded by the Council upon the recommendation of the Financial Aid Director. Academic standing and financial need are considered in making the award. Although there is no legal obligation, the Council hopes that the holder will, if possible, return the money at some future time so that other students may be helped. Apply to the Director, Financial Aid.

Mr. and Mrs. Meier Segals Bursaries: A number of bursaries are available through their generosity to needy students with good academic standing.

Canadian Italian Business & Professional Men's Association: Bursaries are awarded to students of Italian origin or descent by the Association. Apply to the President, Trust Fund Committee. Forms are available through the Financial Aid Office.

St. Andrew's Society Bursary: St. Andrew's Society of Montreal offers bursaries to defray the cost of tuition, books and other essentials to assist needy Montreal students of Scottish descent in furthering their university education.

18.1.13 FINANCIAL AID FOR FOREIGN STUDENTS

The scholarships, bursaries and loans offered by companies, associations, societies, foundations, departments of education and other government agencies are generally not available to students from overseas. Therefore, overseas students who require financial aid should contact as appropriate, one or other of the undermentioned organizations:

1. Students of all nationalities — UNESCO: Students apply through the Department of Education of their own Country providing it is receiving aid through the United Nations Organization.

2. Students from certain countries in Africa, The Antilles & Latin America: The Canadian Government offers assistance through the Canadian International Development agency to students from the following countries:

a) Colombo Plan: India, Pakistan, Afghanistan, Ceylon, Malaysia, Thailand, South-Vietnam, Cambodia, Laos.

b) Special assistance to African countries within the Commonwealth.

c) Educational aid offered to French african states.

d) Foreign Aid Program available to West Indies Countries within the Commonwealth.

e) Foreign Aid Program available to Latin American Countries signatory to the Punta del Este declaration.

f) Students should write to the Department of Education of their respective countries for detailed information and application forms.

3. Other African countries: Students from other African countries may obtain information from the African-American Institute, 355 East 45th Avenue, New York 17, N.Y., U.S.A.

Students should make sure of adequate finances before coming to Canada.

18.1.14 AWARDS AND PRIZES

The Governor-General's Medal: Presented by His Excellency the Governor-General of Canada to the outstanding student graduating with the highest overall average in Arts

The Malone Medal: Presented by the Loyola Students' Association in honour of Rev. Patrick G. Malone, S. J. and awarded to the graduating student who has made an outstanding contribution to non-academic activities on the Loyola campus.

The Loyola Science Medal: Presented by Loyola to the graduating student with the highest overall average in Science.

The Loyola Commerce Medal: Presented by Loyola to the graduating student with the highest overall average in Commerce.

The Loyola Engineering Medal: Presented by Loyola to the graduating student with the highest overall average in Engineering.

The Loyola C.O.T.C. Medal: Presented to the most representative student among the graduates.

The William H. Atherton Prize for History: Awarded to a student for outstanding research in Canadian History.

The Brodrick Award: Established in honour of Dr. Robert Brodrick, Arts '43, and awarded to the graduating student athlete who has distinguished himself in academic and extracurricular endeavours during his years at Loyola.

The Celanese Canada Limited Prize for Chemistry: Awarded to the student with the highest overall average in Chemistry subjects.

The Celanese Canada Limited Prize for English: Awarded to the graduating student in Arts, taking a Major or an Honours in English, with the highest overall average in English subjects.

The Economics Prize: Granted by Loyola to the graduating student in Arts or Commerce, taking a Major or an Honours in Economics, with the highest overall average in Economics subjects.

The Evening Division Medal: Granted by Loyola to the student with the highest overall average in the Evening Division.

The Loyola Evening Students Association Medal: Awarded to the student with the highest overall average in the Faculty of Science.

The Loyola Evening Students Association Medal: Awarded to the student with the highest overall average in the Faculty of Commerce.

The Loyola Evening Students Association Medal: Awarded to the student with the highest overall average in the Faculty of Arts.

The French Language Prize: Donated by the Government of France and awarded to the graduating student who has shown the most progress in French Language courses.

The German Language Prize: Donated by the Consulate General of the Federal Republic of Germany to the student who has shown the greatest progress in the German language course offered at Loyola.

The Philosophy Gold Medal: Presented by Loyola to the outstanding graduate in philosophy and awarded on the recommendation of the Philosophy Department.

The Physics Prize: Granted by Loyola to the graduating student in Physics with the highest overall average in Physics subjects.

The Society of Chemical Industry, Canadian Section, Merit Award, Chemistry: Presented to the highest ranking (over 75%) student in fourth year, majoring in Chemistry, Chemistry-Physics, or Chemistry-Mathematics, who has completed the course in the normal number of years.

The Dr. Jacques Smith Memorial Prize: Donated by Dr. Kurt Ekler in Memory of Dr. Jacques Smith, a Loyola graduate who died suddenly in 1960 at the age of thirty-six, and awarded to the graduating student with the highest overall aggregate standing in Pre-Medical Studies.

Theology Medal: Presented by the Most Reverend Leonard J. Crowley and awarded to the graduating student who has been the most creative and productive in the field of Theology.

The Mme. Alfred Thibaudeau Prize for Political Science: Donated by Miss Madeleine Thibaudeau in memory of her mother and awarded to the graduating student with the second highest average in the field of Political Science.

The Renee Vautelet Prize for Political Science: Awarded to the graduating student with the highest average in the field of Political Science.

The Michael Watson Prize: Donated by Loyola to honour the memory of Michael Watson, an outstanding, capable and popular member of the class of 1967, who met his death in a construction accident at the end of his third year. Awarded to the graduating student who has shown academic superiority in the study of Biology.

The Montreal Economic Association Prize: Donated by the Montreal Economic Association to the student with the highest overall average in his economic courses in his penultimate year.

The Chemical Institute of Canada: Donated by the Chemical Institute of Canada to the student taking an Honours in Chemistry with the highest average in his penultimate year.

The Loyola English Medal: Presented by the Loyola Foundation in honour of Rev. Gerald MacGuigan, S. J. and awarded to the graduating English Honours student who has written the best English Honours essay.

18.1.15 CHAPLAINCY BELMORE HOUSE

Belmore House is a Place of Welcome for anyone who wants to feel at home on Campus. It's an old house with a bit of family atmosphere about it, a place to meet other and make new friends, to find out what is going on around the Campus, and a place to get involved in what appeals to you. If your thing is sports, there are intramural teams for that, a ski week, hiking and camping; if it's celebrating life, there is sharing and liturgy, folk singing and prayer; if it's social issues, there is the grape and lettuce boycott, Archambault Federal Prison, needy families at Christmas, blind children . . . among others.

There are weekends for those who want to get away from it all, go out into the country, and try to put it all together. What is different about Belmore is that it is a house on Campus that is yours, that you can be part of and have a share in running.

Belmore House is the centre for the Loyola Campus Ministry. The present chaplains are 2 priests, a religious sister and a full-time secretary. They are helped by part-time associates who are ministers and rabbis. People who come to Belmore House are recognized and accepted as they are. One of the things that makes Belmore different is that any of the activities and events are potentially open to the religious dimension of one's life. People are encouraged to share and reflect on what they do. For those who want, there is the chance to reflect on this in spiritual terms. Each person is free to participate to the degree he wants. The personal freedom of each to participate to the degree he wishes, is always respected.

18.1.16 MUSIC DEPARTMENT

E. HAUGHEY

The Music Department, which is growing steadily provides the Loyola community with many opportunities for personal musical development.

Areas are available to individual students for instrumental practice and use of the listening facilities provided by the considerable record library.

Individual instrumental lessons may be arranged by consulting the Director of Music. Increased emphasis has been laid on this aspect of personal artistic development and understanding.

Lunchtime listening programmes are provided during the academic year.

The larger ensembles available are the Choral Society and the Loyola Orchestra. Entrance to all activities is by audition. Small ensembles, e.g., Recorder groups, vocal ensembles, are provided on demand.

The Loyola Orchestra, a unique amateur group in the city, has attained a reputation for musicianship and high standards of performance, and has accompanied solo artists of international standing in concert performances. The Choral Society, a 50-voice ensemble, shares with the orchestra a standard of achievement in the presentation of major choral works, and the two groups provide the basis of Loyola's contribution to music-making in Montreal.

The Department also provides examples of the best in professional performances of music in their invited artists programmes during the year. For further information call 482-0320, Ext. 249.

18.1.17 THÉ-ARTS LOYOLA MUSICAL THEATRE

"If there is one reason which stands out above all others for seeing Loyola's Thé-Arts production . . . it is to fix it in one's mind as a standard by which all other amateur theatre, especially amateur musicals, should be compared." Thus read the opening lines of the Montreal Star review by theatre critic Myron Galloway for our fall production "Once Upon A Mattress."

This confidence was substantiated at the 1973 Quebec Drama Festival where this same show captured the Best Production, Best Director and Best Actress citations, in addition to numerous honourable mentions, thereby repeating our 1972 appearance, where, to quote the headline in the Montreal Star, "Loyola's entry sweeps Quebec Drama Festival."

About our Spring production, "No, No, Nanette", Mr. Galloway said,

". . . The student performers have never worked harder, have never appeared more professional as singers, dancers and comedians . . ."

". . . This young company of non-professionals has become so good over the past couple of years that I feel they can be viewed and judged on a very close to professional basis now . . ."

Thé-Arts Loyola is a student organization which endeavours to acquaint its members with the world of Musical Theatre. Whether you are considering a theatrical career seriously or simply want to have fun and find out what its like on the other side of the footlights, there may be a place for you on our stage or with our production staff. Many non-performing persons are needed to make each production successful; business and p.r. personnel, carpenters, painters, graphic designers, seamstresses, ushers . . . the list is endless and all play an essential role. You can receive an academic credit for your work in our shows.

18.1.18 PHYSICAL EDUCATION AND ATHLETICS

E. ENOS

Aikido, Archery, Badminton, Basketball, Bodybuilding, Boxing, Broomball, Cheerleading, Curling, Fencing, Fitness Classes, Football, Golf, Gymnastics, Hockey, Ice skating, Judo, Karate, Kung Fu, Majorettes, Modern Dance, Sky diving, Soccer, Table Tennis, Tennis, Volleyball, Weight-lifting, and Yoga. The activities encompassing all popular and individual sports for men and women are offered at Loyola under the supervision of professionally-trained instructors.

Designed to offer a complete and diversified programme to meet the varied interests of today's students, the programme has been cited as one of the outstanding contemporary models in the country. The aim is to provide an opportunity for all students to participate, and not just the dextrous few who play varsity sports.

The co-educational clubs open to all male and female students provide recreational

physical activity in a relaxed social setting. The idea behind these clubs is to combine sport education with fun in a no-experience-necessary organization.

The men's and women's intramural programmes are designed to accommodate the entire student body, and to provide keen competition and activity in both team and individual sports.

Because varsity teams are limited in number the junior varsity level has been set up to allow greater numbers of students to participate. It operates as an extension of men's intramurals, and acts as a training ground for the varsity level.

The traditionally strong Varsity programme is primarily for students with playing experience. Loyola Varsity Squads have an excellent reputation for successful competition against other top ranked Canadian and regional United States university teams. Any student wishing to participate in Varsity Athletics is subject to QUAA and CIAU eligibility rules, which state that the student must be enrolled as a full-time student at the University. The Women's Varsity Program offers women students the opportunity of competing at the intercollegiate level within the Québec Universities Athletic Association.

The south campus is the focal point of all the Physical Education action, and includes full-length playing fields, outdoor activities, and a modern $3,000,000 physical education centre. The centre contains facilities for men and women, a spacious gymnasium, and an ice arena. Other areas include a training and rehabilitation centre equipped with ultrasonic and hydro-therapeutic equipment; an activities room; administration offices; numerous dressing rooms; a press box; snack bar; table tennis; a combatives room for individual contact sports and a weight-training room equipped with a 16 station universal gym.

Details on all activities are included in the Department of Physical Education and Athletics Guide which is issued at registration. For further information call 482-0320, Ext. 730.

18.1.19 CANADA MANPOWER CENTRE

E. E. ALLEN

The Canada Manpower Centre at Loyola stresses not only job placement, but effective job placement. The CMC provides the facilities for employers to find workers and workers to find-jobs. Students are advised by experienced manpower counselors, where and how they may improve their chances of getting and holding better jobs.

Services are available to Day and Evening students interested in finding permanent positions, summer and part-time jobs. Seniors may have interviews arranged on campus with representatives of leading industries, professions and government departments. Appointments are arranged for evening students unable to come during the day.

The CMC Career Library and Reading Room has a supply of vocational and graduate programme materials. Printed information is available free of charge.

The Canada Manpower Centre is located on the top floor of the Centennial Building, 6935 Sherbrooke Street West, 489-3885.

18.1.20 LACOLLE CENTRE

The Lacolle Centre for Educational Innovation is an off-campus facility located 40 minutes from Loyola near Lacolle, Québec. It provides a place and other resources so that people can explore new avenues of learning and by being together, enhance their overall educational experiences at Loyola.

While the Centre offers some programmes of its own, it exists to encourage the development of programmes by any interested class, group, or individual. A programme consultant is available to give assistance in planning programmes so that people have the best opportunity to achieve their objectives.

By having the Centre off-campus and out of the context of everyday life at Loyola, it is possible for people to de-emphasize their official roles, and have contact with other segments of the community on a more personal basis.

The Centre can be used as a supplement to regular classes, as a place where people who regularly work together can build more productive relationships, and as an opportunity for people to explore mutual interests with others. The Centre is limited only by the imagination and resourcefulness of the Loyola Community.

Proposals for the use of the Centre should be made well in advance. The Co-ordinator or Secretary may be contacted through the Lacolle office — Room AD 104 (482-0320), local 344.

18.1.21 LOYOLA CAMPUS CENTRE

The "Centre" which opened in 1973, is designed to meet the social and recreational needs of students.

It is open seven days a week and includes both a main lounge and 'quiet' lounge, two multi-purpose conference rooms a cafeteria and pub, as well as recreational facilities for billiards, ping pong, chess and card games.

The operation of the Campus Centre is dictated by a Board of Directors, on which both day and evening students predominate.

Mr. Douglas Devenne is the Director of the Campus Centre.

18.1.22 LOYOLA CAMPUS FOOD SERVICES

A. WOODCOCK

The Hingston Hall Dining-Room is open to all for breakfast and lunch until 3:30 p.m. daily, except Saturdays and Sundays and holidays. 'A la carte' service and special hot meals are provided. Special events and parties can be arranged through the Events Coordination Department. The seating capacity is 300.

At the new Campus Centre, students can choose from a variety of hot food, snacks and beverages, in addition to daily specials. The seating capacity is 275 when the Pub is not in use. The Pub opens at 3:00 p.m. with a seating capacity of 100. This restaurant opens daily at 8:00 a.m. except on Saturdays and Sundays when it opens at 11:00 a.m.

Meal plans are available for use at Hingston Hall and the Campus Centre. (For

further information, please see section on Tuition and Fees).

Guadagni Lounge provides facilities for students who prefer to bring their lunch. A coffee bar is operated by the Intrafraternity Council. Coffee, candies, doughnuts, pastries and beverages are offered at reasonable prices. The seating capacity is for over 100 persons.

18.1.23 UNIVERSITY BOOKSTORES

Books, supplies, and art materials may be bought at the University Bookstores. The Sir George Williams' Bookstore is located on the mezzanine of the Hall Building and the Loyola Bookstore is located in the south half of the Physical Services Building.

At Sir George Williams' in the beginning of each academic year, required texts are available from an additional bookstore located in Birks Hall on the main floor of the Norris Building.

It is recommended that students review the return policies at both Bookstores before making any purchases.

18.1.24 LOYOLA DAY NURSERY

The Child Day Care Centre at Loyola, which began operating 5 years ago, provides a comprehensive nursery school programme for pre-school children ages 3 - 5, on both a full and half-time basis, for all members of the Loyola community.

The Centre is well equipped, both in terms of staff and materials. The programme offers a balance of structured and unstructured, individual and group, quiet and group activities. These include: physical activity, cognitive and problem solving activities e.g. puzzles, form boards, word concept and number games, etc.; free, imaginative and dramatic play, rhythm and music activities, arts and crafts, story telling and reading. The programme is run by well qualified and experienced nursery school teachers with student assistants from the "Practicum in Early Childhood Education" course.

Winter Programme: The regular winter programme runs from September to April from 8:30 a.m. to 5:15 p.m. Parents are urged to apply early since space is limited.

Summer Programme: A special summer programme is offered in conjunction with the Day Summer Session from 8:30 a.m. to 1:15 p.m. daily. Parents must apply before June 1.

For further information and application forms, please contact the Centre at 2499 West Broadway or phone 486-5840.

18.1.25 LEGAL INFORMATION SERVICE

Legal advice and help are offered to all students who may require assistance on matters relating to their legal rights. A student charged with a criminal offence may have an attorney appear for him in all criminal proceedings as well as those originating from infractions of the Highway Code and municipal by-laws. These services are free and confidential. This service may also extend to civil proceedings in which a student is involved as either plaintiff or defendant, the costs of which may be defrayed for students without the necessary financial means.

18.1.26 STUDENT COURT

A student Judiciary Board is set up to receive complaints of any student discipline that is non-academic in nature. It consists of a Student Court Officer and five members chosen at random from a pool of Loyola students. Under the direction of the Student Court Officer, the Court will advise the student of a complaint against him, and may call him to a hearing before Student Court, where it will be decided if there is enough evidence to warrant a trial. If a student pleads guilty, or is found guilty after trial, the Student Court has the power to levy a fine or other sentence that may seem appropriate.

An appeal may be lodged against the decision of this Court through the Court of Final Appeal which can sustain the decision of the lower court, reduce the sentence, or decide in favour of the appellant.

Complaint forms may be obtained from the Legal Information Service Office in Hingston Hall, Room 228B.

18.1.27 LOYOLA STUDENTS' ASSOCIATION

The L.S.A. is YOUR student association. It is financed by a student activity fee which each student pays and its goal is to serve the needs of all day students. Since the L.S.A. is aware that these needs are not exclusively cultural and social, it also concentrates on instituting academic reforms. Some of these have included the initiation of grading reforms, course evaluation, and increased student representation on Senate, as well as the Loyola Faculty Council and various committees.

The L.S.A. stresses *Involvement*. If you are dissatisfied with anything at Loyola or have suggestions which you would like to offer, the L.S.A. is the place to come. Loyola prides itself in being small and flexible enough to listen to what students have to say, and to be able to do something about it. Reforms can take place only when students have the ideas and the initiative to make them happen. The L.S.A. provides a tool through which students can make their voices heard.

The L.S.A. is composed of three elements: The Executive, Board of Directors, and Student Senate. Each February, elections for the two Co-Presidents and members of the Board of Directors are held. The other members of the Executive are chosen by the Co-Presidents and are subject to ratification by the Board of Directors.

Although each member of the executive is assigned different areas to deal with, the entire executive works as a whole to formulate policy for the Association.

Co-Presidents: The role of the Co-Presidents is basically to act as the chief administrative officers for the L.S.A. They oversee all functions and act as spokesmen for the students.

Campus Services: This department is concerned with the services available to students on campus. In this area it works closely with Student Services. Student Security and student employment are also handled by this department.

Education Department: The Education

Vice-President ensures that the students' point of view in academic matters is expressed to the administration.

Financial Department: The Financial Vice-President handles the finances of the L.S.A. and its member associations. The main objective of this department is to see that all spending is done with the students' interests in mind.

Information Services: The goal of this department is to keep both the students and the general public informed of L.S.A. activities, and to open communication channels to and from the association.

Internal Department: This department makes sure that the L.S.A. operates efficiently. It also handles complaints or questions from the various member associations, clubs, and societies.

Programming Services: This department is mainly concerned with the organization of special events such as C.O.P., Carnival, and the Grad Dance. It also programs various activities including concerts and exhibitions.

Board of Directors

The Board is the legislative body of the L.S.A. It consists of sixteen members elected annually as voting members of the Board. Representation is in proportion to the number of students enrolled in each faculty. It is the function of the Board to regulate and co-ordinate the policies and activities of the Association. They check and review legislation proposed by the Executive and may also introduce their own proposals. They establish special committees to review any issues and problems that may arise during the year.

Student Senate

Student Senate is the judicial body of the L.S.A. It has jurisdiction over matters affecting student discipline and constitutional interpretation. The Senate acts as guarantor of students' rights as defined by the Bill of Rights of the L.S.A.

Special Committees

Campus Orientation Programme: This is designed to initiate new students and to welcome back returning students. It is designed with entertainment, information and orientation, cultural and athletic activities in mind.

Carnival: Carnival time is February and provides one of the most exciting and hectic weeks of the year. Activities are designed to provide everyone with a good time.

Graduation Committee: This committee arranges for the editing of the Review, all the details necessary for Convocation, and for the traditional Grad Ball.

Associations

The over forty organizations on campus cover most interest areas. They range in nature and scope from dramatic, musical and recreational to ethnic, academic, professional, and political.

Some may act as interesting supplements to areas covered in classes. These department societies include Communication Arts, Economics, English, History, Modern Languages, and Sociology.

Some exist to further occupational interests: The Arts Students Association, The Commerce, The Science, Students' Associations, and the Engineering Undergraduate Society.

Others are designed to appeal to a range of interests and ideals such as the International Association of Students of Economics and Commerce (A.I.E.S.E.C.), and fraternities and sororities.

The offices of most are situated in the Centennial Building at 6931 Sherbrooke Street West, Telephone 482-9280.

Publications

The Board of Communications, consisting of six student voting members, acts as a Supervisory Board for all campus publications. These include Loyola News, the official student newspaper; Loyola Radio; Student Directory; Loyola Review; Photo Loyola; official L.S.A. bulletins and all other student-oriented publicity.

18.1.28 LOYOLA OF MONTREAL ALUMNI ASSOCIATION INC.

The objectives of this Association shall be to advance the interests and to promote the welfare of Concordia, of the Association and its members, and to provide a vehicle through which former students of the Loyola Campus of Concordia University may maintain their interest and express their support of their alma mater, to disseminate information among former students relating to developments at the University, to foster continuing contacts between former students, and to conduct projects, organize events and to do all other things necessary and useful for the University.

During the course of the year, the Loyola of Montreal Alumni Association Inc. sponsors the Golf Tournament, the Oyster Party, the Sports Hall-of-Fame, social activities, cultural activities, sports activities, the Past-Presidents' Dinner, an exchange programme between students and members of the Business/Professional community, information sessions by well-known speakers for the benefit of University and High School students and many other events catering to both men and women graduates. The Association also sponsors the selection and presentation of the Loyola Medal to outstanding Canadians. A General Meeting is held every year in the month of May. At this meeting officers and directors for the coming year are elected and all other matters of general business transacted.

Annual giving by Alumni represents the largest simple source of support to universities and colleges in North America. A regular yearly contribution to the Association aids a variety of programmes at the University.

The officer of Alumni Affairs is located at 7306 Sherbrooke Street West. Information can be obtained at 482-0320 Local 402.

18.1.29 RULES AND REGULATIONS

An environment that is conducive to learning can only be maintained through reasonable campus rules and regulations. At Loyola, these rules are not intended merely to restrict. Rather, they encourage each individual student to be self-reliant and responsible. Registration requires acceptance of these rules in order to ensure that the rights of all individuals be respected.

Loyola rules are not dictatorially handed down by the administration. Student government is involved in all policy-making that

concerns the rights of the students. The rules are subject to change by an act of the Senate, which includes student representation.

The policy states that (1) The rules are the two-fold responsibility of Loyola to the entire student body, and to the student as an individual. (2) Any individual charged with a breach of policy is assured a fair and just hearing. He has the right to hear explicitly stated charges, an open hearing, and confrontation of witnesses. (3) The burden is on the accuser to prove the accused committed the charges, not on the accused to prove innocence.

Students are not permitted to possess alcoholic beverages on campus. Exceptions for group organized events can be obtained from the Events Co-ordinator. Applications must be made two weeks prior to the event. Residence halls determine their own policy regarding the use of alcohol except for public events.

The use and/or possession of hallucinogenic drugs and all drugs specifically prohibited by law are not permitted on the campus. The penalty for violation may be dismissal.

Each student must assume responsibility for his own actions, and conduct himself in a lawful manner. The rules also require that constitutional authority be respected and that both private and public property be protected. Any student behaving contrary to these policies is subject to penalties according to the gravity of the offence.

18.2 Ombudsman — Loyola Campus

The position of Loyola Ombudsman has been created upon the recommendation of the L.S.A.

This post provides the entire community with an effective mediator who is able to receive and who will try to resolve any grievances from members of the community concerning academic and administrative procedures, practices, and decisions. Resolution can take the form of informal contact and conciliation, or formal recommendations to the appropriate campus officers, committees or boards..

Any problems that the community may encounter which could affect their life at Loyola can become the problems of the Ombudsman. He attempts to deal with the problems himself as often as possible, and will refer the individual to other offices only on rare occasions.

The Ombudsman is independent of outside direction and the usual structures, but is accountable to the Principal, Loyola Campus.

Anyone, student or faculty member, who may need the assistance of the Ombudsman is encouraged to make full use of this Loyola service. The office of the Ombudsman is located in Room AD 105 in the Administration Building.

18.3 Student Life
Sir George Williams Campus

18.3.1 STUDENT LIFE

The Sir George Williams Campus of Concordia University has a wide variety of extra and co-curricular programmes for Day, Evening and Graduate students. The three student associations offer opportunities to participate in social and special interest groups, student government, training and development in radio, television and journalism. Concordia University is a member of the Q.U.A.A. The Sir George Williams Campus offers an extensive athletics programme with special emphasis on the intramural and recreational sports programme.

Responsibility for policy and budgets for the wide range of student services rests with the University Council on Student Life, which is composed of ten students, six faculty members, three administrators and a representative from the Board of Governors. The Council reports to the Rector, and through his office has the responsibility for establishing priorities in student services to meet changing student needs.

18.3.2 STUDENT SERVICES

Orientation

Orientation at Sir George Williams Campus is designed to familiarize new students with the various services and facilities available to them, and to help new students resolve any problems which may be encountered during the initial introduction to university life.

Legal Aid

A number of alumni lawyers have generously offered service to students in need of legal advice. The service does not cover legal fees which may be incurred. Appointments are made through the Office of the Dean of Students.

Off–Campus Housing

As there are no residence facilities at the Sir George Williams Campus, the Office of the Dean of Students maintains an off-campus Housing Registry for students seeking accommodations. The Registry represents listings of rooms, room and board, and apartments. The cost, location and particulars of each listing are included.

When considering accommodation, students are strongly urged to refer leases to the Office of the Dean of Students before signing. Students should also be sure to obtain their own copy of a lease immediately.

Food Services

The Food Service Centre is located on the 7th floor of the Hall Building and is open for breakfast, lunch and dinner daily, except Saturdays and Sundays. "A la carte" service and special hot meals are provided. Special events and parties can be arranged by telephoning the Booking Agent, Mrs. Jacqueline Plamondon at 879-4336.

The seating capacity is 700. Hours of operation are as follows:

Monday through Thursday	8 am - 9:30 pm
Friday	8 am - 8:30 pm

A small eating area is provided in the Norris Building (2nd Floor) and is served by vending machines.

18.3.3 STUDENT HEALTH AND ACCIDENT INSURANCE

A group health and accident insurance policy is offered on a voluntary basis to Canadian day students. For students eligible for provincial or federal hospital and medical coverage the cost is ten dollars ($10.00).

Out-Of-Country Students

The group health and accident insurance plan is COMPULSORY for all out-of-country students entering the University. The plan is compulsory as such students are not eligible for coverage offered under the Quebec Provincial Hospital Insurance Service. The plan is available for single or married coverage.

18.3.4 CHAPLAINS

The Chaplains at Sir George are recommended by their denominations and include Catholic, Anglican, Jewish, Lutheran, United Church and Orthodox appointments.

Administered under the Office of the Dean of Students, their operational expenses other than salaries come from the Student Services budget.

The Chaplains emphasize a varied approach to spiritual guidance in their preparation of programmes for the year.

18.3.5 FINANCIAL AID

The Office of the Dean of Students maintains staff who are always available to help students solve individual problems or to explain existing aid programmes and regulations.

Quebec Social Allowance

A monthly allowance of $10.00 is granted to the parent or guardian of all full-time students between the ages of 16 and 18, domiciled in the Province of Quebec.

For information, please address all correspondence to:
The Social Allowances Commission

out the buildings and the student newspapers usually cover all Georgian events.

18.3.10 GUIDANCE SERVICES H-440

Counselling — 879-2879
Personal, educational, vocational.
Individual appointments and group programmes.

Guidance Information Centre — 879-4443
Academic and career planning information and assistance.

Reading and Learning Skills — 879-2879
Effective reading courses and learning skills sessions.

Canada Manpower Centre — 283-5177
Job placement and career counselling.
Full time, summer, temporary.
2020 Mackay St.

Personnel

Director
J. A. SPROULE, BA, MPsSc

Assistant Director
F. W. DENTON, MA

Counsellors
R. C. BONCORE, BA, MSc
J. C. GELLERT, BA, MSc
J. GOLDNER, BA, BCom., BSW
D. P. KREDL, BA, MEd
D. M. STEHOUWER, BA, MEd

Counsellors, Evening Staff
B. BULTZ, MA., PhD.
J. G. EATON, BA, MEd
E. GUTBRODT, BA, PhD
S. B. MONTIN, BA, EdM
J. SKENE, BA, MEd
P. WRIGHT, BSc, MA

Consultant Psychiatrist
G. DA SILVA, M.D.

Guidance Librarians
L. STEPHENS, BA, MLS
V. CUMMINS, BA, MLS

Reading and Study Skills Counsellor
D. P. OSBORNE, BA

Canada Manpower Counsellors
P. DAGENAIS, BA
G. RAIL, BCom
O. RAYSON

18.3.11 GRADUATION PRIZES

The Birks Medal awarded annually, when merited, by Henry Birks & Sons (Montreal) Ltd., to the highest ranking graduating student receiving the degree of Bachelor of Arts.

The Mappin Medal awarded annually, when merited, by Mappin's Ltd. of Montreal to the highest ranking graduating student receiving the degree of Bachelor of Science.

The Frosst Medal awarded annually, when merited, by Charles E. Frosst & Co., to the highest ranking graduating student receiving the degree of Bachelor of Commerce.

The Chait Medal awarded annually, when merited, to the highest ranking graduating student receiving the degree of Bachelor of Engineering.

The Alfred Pinsky Medal awarded annually, when merited, to the highest ranking graduating student receiving the degree of Bachelor of Fine Arts.

The Computer Science Medal awarded annually, when merited, to the highest ranking graduating student receiving the degree of Bachelor of Computer Science.

The Board of Governors Medals for Creative Work in the Arts awarded annually, when merited, by the Board of Governors of the university to students giving evidence of independent work of outstanding ability in the following categories: visual arts; auditory arts; performing arts; film and video; literary arts (poetry); literary arts (drama); literary arts (fiction).

Governor-General's Medal. Presented by His Excellency the Governor-General of Canada, awarded annually to the graduating student showing the highest achievement in the field of English language and literature.

The J. W. Bridges Medal for Psychology awarded annually, when merited, to the graduating student with the highest standing in Psychology. This prize was established by his colleagues of the faculty to honour the outstanding contribution of Dr. J. W. Bridges, Professor Emeritus and former Chairman of the Department of Psychology.

The W. R. Fraser Medal for Philosophy awarded annually, when merited, to the graduating student with the highest standing in Philosophy. This prize was established by his colleagues to honour the outstanding contribution of the late W. R. Fraser, Professor Emeritus, and former Chairman of the Department of Philosophy.

The Sun Life Prize in Economics awarded annually, when merited, by the Sun Life Assurance Company of Canada, to the graduating student with the highest standing in the Economics honours or major.

The Everett C. Hughes Medal awarded annually, when merited, to the graduating student with the highest standing in Sociology. This prize was established by his colleagues to honour the outstanding contribution of Professor Everett C. Hughes to the development of Sociology in Canada.

The Canadian International Paper Company Prize in Biology, a cash prize of $100.00 to be awarded annually, when merited, to the graduating student with the best record of work in the field of Biology.

The Ross Medal awarded annually, when merited, by Dr. Howard I. Ross to the graduating student with the highest standing in the Accountancy major.

Merit Award, The Society of Chemical Industry-Canadian Section awarded annually, when merited, to the student majoring or honouring in Chemistry with the highest standing in the final year of this programme.

The Corporation of Professional Chemists of Quebec Prize awarded annually, to the graduating student with the highest standing in any one of the programmes accepted by the Corporation of Professional Chemists of Quebec.

Association of Alumni Award awarded annually, when merited, to the graduating student, who, in the opinion of the Scholarship Committee, has by his activities, achievements, and interest, during his term at the university, won the outstanding commendation and respect of his fellows and of the faculty.

Department of Family and Social Welfare
Parliament Buildings
Quebec City, Quebec

Province of Quebec Loan-Bursary Plan

Provincial government assistance is available in the form of guaranteed loans and bursaries, the amounts of which vary in accordance with the financial needs of the student. It is important for the student to note that the provincial government operates on the philosophy that the primary responsibility for financing a student's post-secondary education belongs to the student and/or his family. Assistance is provided to supplement family-student resources. Further, it is important to note that to qualify for bursary assistance, the student must first accept a loan.

Deadline

Students must apply prior to September 30, 1975. Application forms may be obtained from the Office of the Dean of Students or directly from the Student Aid Service. If you applied during the 1974-75 academic year, you will automatically receive an application at the address shown on your 1974-75 form. It is not necessary for you to wait until you are registered before having your form approved by the Office of the Dean of Students.

For additional information, please refer to the Financial Aid Information Handbook.

University Bursaries and Scholarships

A number of university bursaries and scholarships are available for students in both the Day and Evening Divisions. A complete listing of these awards and the conditions under which they are awarded is available from the Office of the Dean of Students. All applications must be submitted prior to December 31st of each academic year.

Emergency Loan Fund

The Sir George Williams Campus Loan Fund is administered on behalf of both the Day and Evening Students' Associations by the Office of the Dean of Students. The fund provides students with short-term financial assistance. The maximum loan is normally $150.00 for a period not exceeding 90 days. Students are welcome to use the fund as many times as is necessary. However, they may not have two loans outstanding at any one time.

18.3.6 CHILD CARE

The Sir George Williams Campus offers Child Care services for children of students. Students may enroll children two to five years of age in the Child Care Centre located at 2305 St. Marc St. Application forms and details may be obtained in the Office of the Dean of Students.

18.3.7 HEALTH SERVICES

The Sir George Williams Campus Health Centre is located at 2145 MacKay St. Staffed with registered nurses, the centre can refer students to specialists and is equipped to give first-aid treatment for minor injuries and handle emergencies.

Appointments with a doctor may be made by calling 879-4010.

Hours: 8:30 a.m. to 10:00 p.m.
Monday to Friday

18.3.8 DEAN OF STUDENTS

MAGNUS FLYNN, B.COM.

Assistant Deans
JACK HOPKINS, B.A., M.S.W.
DOUGLAS INSLEAY, M.Sc.
JOAN RICHARDSON, B.A.

Financial Aid Officer
DAVID RAMSAY, B.A.

Administrative Assistant
JOE NOVAK, B.A.

18.3.9 DEPARTMENT OF PHYSICAL EDUCATION AND ATHLETICS

2160 Bishop Street — 879-5840

Director of Physical Education & Athletics
GEORGE SHORT, BPE, BEd, MPE

Assistant Director of Athletics
JOSEPH ROBOZ, BA, DPEd

Women's Athletics
JANE TANNER

Intramural Sports
BOB PHILIP, BA, BEd

Sports Information
MIKE HICKEY, BA

Athletic Therapist
GARY CUMMINGS, BSc

Intercollegiate Sports

The university participates in the Quebec University Athletic Association and the Canadian Intercollegiate Association. Both men and women may compete on the varsity level in many different activities. The university has developed national calibre athletes in hockey, basketball, wrestling, track and swimming.

Intramural and Recreational Activities

Intramural hockey is the most popular activity, but Modern Dance, Yoga, Karate, Floor Hockey and special Fitness classes are also very popular. The aim of the department is to offer a programme for everyone. New activities can be initiated by contacting the Department of Physical Education and Athletics.

Facilities

The university offers some of its various programmes at the downtown Y.M.C.A. Other facilities used for Intramural programmes are H.M.C.S. Donnacona, Birks Hall, and Loyola. Varsity basketball can be viewed at the Showmart and hockey at the Verdun Auditorium.

Booster Club

For those who are especially enthusiastic we have booster club activities.

Student Managers and Hourly Assistants

If you enjoy working with teams and would like to be a student manager or assistant, contact the department as soon as you register.

Eligibility

Everyone is eligible for intramural and recreational activities. but only full-time day students with satisfactory academic performance may compete in intercollegiate sports.

Responsibility of University

It is the responsibility of the student to have proper accident and medical insurance.

Registration and Athletic Information

Students may register for all sports at the department office — 2160 Bishop Street. Athletic notice boards are situated through-

Maynard Metcalf Scholarship: In the day division, a scholarship of $100.00 is awarded to a student in any year or faculty for outstanding scholastic achievement during the preceeding academic year.

The P.T.R. Pugsley Memorial Scholarship: Established by friends of the late Professor Pugsley to commemorate his many years of service as senior Professor of the Commerce Faculty of Sir George Williams. The scholarship of $150.00 is awarded annually to an outstanding student in the Faculty of Commerce, day or evening division.

Weldon Scholarship: Awarded annually, to a deserving student in the Faculty of Engineering at the discretion of the Scholarship Committee. The value of this scholarship fluctuates depending on current interest rates.

Zellers' Scholarships: In the day or evening division, one scholarship of $100.00 to be awarded on the basis of high scholastic achievement in the penultimate in the year of the Commerce degree curriculum.

18.3.14 UNDERGRADUATE SCHOLARSHIP-BURSARIES

Note: These awards are made on the basis of financial need and high academic standing. Applications for these awards should be forwarded to the Financial Aid Officer unless otherwise stated.

Affiliated Factors Corporation Bursary: A bursary of $100.00 is awarded annually to an undergraduate student in any Faculty on the basis of need and academic standing.

Association of Alumni Scholarships — Bursary — $100.00 awarded annually to an undergraduate student in any Faculty on the basis on need and academic standing.

Joel Birenbaum Memorial Bursary: This bursary of $450.00 is awarded each year, in memory of Joel Birenbaum, a student of Sir George Williams. This award will be made to a needy, worthy student in the Faculty of Science at the discretion of the Scholarship Committee. The value of this bursary may fluctuate depending on the current interest rates.

Henry I. Chinks Memorial Scholarship or Bursary: Awarded annually on the basis of need and academic standing to an evening student in the Faculty of Science, in the Field of Chemistry. Recipient is chosen by the Chairman, Department of Chemistry.

Joseph Gilbert Joyce Memorial Scholarship or Bursary: This scholarship or bursary shall be awarded to an evening student in any faculty or year, at the discretion of the Scholarship Committee. The basis of award shall be academic standing, financial need and promise in his chosen field of study. The late Rev. Dr. J. G. Joyce, during his twenty-four years' ministry at Verdun United Church, maintained a deep interest in the evening division of the university. This scholarship is established according to his conviction that knowledge and higher education should be available to those who seek to make a creative contribution to the development of mankind.

The S. H. McNeilly Bursary: A $75.00 bursary is available annually to a student who is employed by the Canadian Pacific Railway Company. This bursary is awarded to an evening student in the second year of any faculty of the university, based upon scholastic achievement and need.

Marsh & McLennan Centennial Scholarship or Bursary: The Marsh and McLennan Limited Centennial Scholarship or Bursary shall be awarded annually to an undergraduate student who has completed at least one year at Sir George Williams. Selection shall be made by the Scholarship Committee based upon need and academic standing. (Preference will be given to a Commerce student).

Nathan H. Messer Scholarships: Two scholarship-bursaries shall be awarded annually to needy, worthy students entering their final year and majoring or honoring in Accountancy, by the Scholarship Committee. Following consultation with the Chairman, Department of Accountancy.

Ela Moll Memorial Bursary: This bursary of $50.00 is awarded each year in memory of Ela Moll, a Fine Arts student of Sir George Williams. This award will be made to a needy, worthy student in his/her second year, day division, BFA programme in the Faculty of Fine Arts by the Scholarship Committee, upon the recommendation of the Faculty of Fine Arts, Faculty Council. Apply to the Fine Arts Faculty.

National Council of Jewish Women (Montreal) Scholarship: A scholarship of $100.00 is awarded annually to an undergraduate student in the evening division of the Arts Faculty, who has achieved high scholastic standing and is in need of financial assistance.

P.E.O. Scholarship: In the day or evening division, a scholarship of $50.00 is awarded annually to a female student in any year who demonstrates scholastic ability and has the need of financial assistance to pay her tuition fees.

Myer F. Pollock Scholarship: Awarded annually to a needy worthy student in the Faculty of Engineering at the discretion of the Scholarship Committee. The value of this award fluctuates depending on the current interest rates.

The Anne Savage Memorial Fund: This bursary of $50.00 is awarded each year in memory of Anne Savage, painter and art educator. It is given to a deserving student in the Faculty of Fine Arts, upon the recommendation of the Faculty of Fine Arts Department Council. Applications should be made through the Fine Arts Faculty.

Sir George — St. Vincent Bursary: Awarded annually, to a needy, worthy student from St. Vincent, at the discretion of the Scholarship Committee. This award has a value of $300.00

Steel Company of Canada Bursary: This award has a 3 year value of $1500.00 provided satisfactory academic standing is maintained each year, and is available to a student who has attained a minimum average of 66% in CEGEP.

Walter Stenhouse Bursary: This bursary of $75.00 established by Mrs. E. Pavey and Mrs. J. Tombs, and awarded under the auspices of the Arts Club of Montreal, is available annually to a final year student in the

First Graduating Class Award. The first graduating class of the Faculty of Arts, Science and Commerce, known as the Guinea Pig Club, a name symbolic of their pioneering experience, makes a presentation when merited to a member of the university community who is adjudged to have made the most outstanding new contribution, either academic or extra-curricular, to the student life of the university.

The Robert C. Rae Prize in Applied Social Science awarded annually, when merited, to the graduating student with the highest standing in Applied Social Science.

The Medal for Geography awarded annually, when merited, to the graduating student with the highest standing in Geography.

The Medal for Geology awarded annually, when merited, to the graduating student with the highest standing in Geology.

The Prize for French awarded annually, when merited, to the graduating student with the highest standing in French.

Martin Lewis Memorial Prize in History awarded annually, when merited, to the graduating student with the highest standing in History.

The Prize for Interdisciplinary Studies awarded annually, when merited, to the graduating student with the highest standing in Interdisciplinary Studies.

The Medal for Mathematics awarded annually, when merited, to the graduating student with the highest standing in Mathematics.

The Prize for Modern Languages awarded annually, when merited, to the graduating student with the highest standing in Modern Languages.

The Medal for Physics awarded annually, when merited, to the graduating student with the highest standing in Physics.

The Herbert F. Quinn Medal for Political Science awarded annually, when merited, to the graduating student with the highest standing in Political Science.

The Boyd Sinyard Prize in Religion awarded annually, when merited, to the graduating student with the highest standing in Religion.

18.3.12 UNDERGRADUATE PRIZES

The Chemical Institute of Canada awarded annually to the best student in the penultimate year entering the final year and majoring in Chemistry.

Alvin J. Futtman Scholarship: $100 annually — to a student from Africa or Asia.

Henry F. Hall Scholarship: awarded annually.

Maynard Metcalf Scholarship: $100 awarded on the basis of scholastic achievement in the preceding year to a day student.

The Montreal Economics Association Award awarded annually to the student in the penultimate year with the highest standing in Economics.

Hebrew Culture Organization of Canada Prizes, Samuel Kizell Memorial Prize of $50.00 awarded annually, for excellence in the study of the Hebrew Language.

An additional prize of $50.00 awarded annually, for excellence in the study of the Hebrew language.

Prix du Département de Français
Prix du Consul général de Suisse
Prix du Consul général de Belgique
Prix du Consul général de France

18.3.13 UNDERGRADUATE SCHOLARSHIPS

Note: These awards are made on the basis of academic standing and recipients are selected from the academic honours list. No applications are necessary unless otherwise indicated.

Allied Chemical Canada Limited Scholarship: This scholarship is awarded annually to a final year student in the Department of Chemistry on the recommendation of the Chairman of the Department. The recipient receives a suitably inscribed silver tray and $750.00.

Association of Alumni Presidents' Scholarship: A Scholarship in the amount of $100.00 is awarded to any student in any year or faculty on the basis of outstanding academic achievement during the preceeding academic year.

The late Captain Melville Greenshields Scholarship: This scholarship in the amount of $500.00 will be awarded to a deserving student of Art for the furtherance of his studies on the recommendation of the Fine Arts Faculty.

Compton-Lamb Memorial Scholarship: This scholarship established in memory of the late Neil Compton and Sidney Lamb shall be awarded annually in the Department of English. The recipient must be registering in the last five courses of an English Honours Programme. Application should be made to the Chairman, Department of English.

Alvin J. Guttman Scholarship: A scholarship of $100.00 is available annually to a student from Africa or Asia. This scholarship is awarded at the discretion of the Scholarship Committee.

John A. Hale Memorial Scholarship: This scholarship has been established in memory of the late John A. Hale, a student of Sir George Williams. This scholarship will be awarded annually to a deserving student entering the third year of a Bachelor of Computer Science programme on the recommendation of the Chairman, Department of Computer Science.

Henry F. Hall Scholarship: Established by the Faculty and Staff of Sir George Williams in recognition of the many years of service given to the university by the late Dr. Henry F. Hall. This scholarship is awarded annually on the basis of merit to a student in any faculty of the university, day or evening division at the discretion of the Scholarship Committee.

Lucille Irvine Memorial Scholarship: This scholarship is awarded annually on the recommendation of the Chairman, Department of Psychology to an outstanding student of Psychology in either the day or evening division. This scholarship was established by Mrs. William Broidy in loving memory of the late Lucille Irvine, a devoted teacher and a former member of the university staff.

Canadian Federation of the Blind Bursary: Bursary assistance is awarded to a registered blind person or his parents. In awarding this bursary, preference will be given to members of the Canadian Federation of the Blind and in particular to those people domiciled in the Province of Quebec.

Mr. Gordon L. Mc. Gilton
Corresponding Secretary
Montreal Branch
Canadian Federation of the Blind
1172 St. Matthew Street
Montreal, Quebec

Canadian-Italian Business and Professional Men's Association: The Association created a trust fund to assist students of Italian origin or descent to continue their university studies. Applications must be completed before May 31st, annually.

Mr. Dante Panni, Chairman
Trust Fund Committee
Canadian-Italian Business and
Professional Men's Association
892 Crémazie West
Montreal 303, Quebec

Commonwealth Scholarships: Under a plan worked out at the Commonwealth Education Conference at Oxford in 1959, responsibility is shared between the Canadian Commonwealth Scholarship and Fellowship Committee and the External Aid Office to enable an increased number of able students to share in the wide range of educational resources available through the Commonwealth. An undergraduate award is made for the period required to enable the student to obtain his degree.

For information contact:

The Canadian Commonwealth
Scholarship and Fellowship Committee
c/o Association of Universities
and Colleges of Canada
or
The Director General
External Aid Office

Both at

151 Slater Street, Ottawa, Ontario

Guidance Information Centre: The Centre collects information and application forms, if available, on loans, bursaries, scholarships, fellowships, grants-in-aid, etc. which are available from sources other than the Quebec Department of Education or Concordia University, for students studying at Concordia or elsewhere. This includes aid offered by private foundations, associations and companies, from Canadian and foreign sources.

The Centre has information on aid available from Canada Council and Federal Government, Departments, The I.O.D.E. Scholarships, Commonwealth Scholarships, etc. They collect financial aid directories such as awards for graduate study and research (Canadian); scholarships and fellowships for foreign students studying in the Netherlands: A selected list of major American fellowship opportunities and aids to advanced education for foreign nationals; The Grants Register; postgraduate awards in the English speaking world; UNESCO study grants and courses for women; UNESCO study abroad; Annual Register of Grant Support; and many others.

Lebanese Syrian Canadian Association: The Lebanese Syrian Canadian Association award annually a series of scholarships to students of Lebanese, Syrian descent.

The Chairman
Scholarship Committee
Lebanese Syrian Canadian Association
40 Jean-Talon East
Montreal, Quebec

Leonard Foundation Scholarships: Applications for scholarships must be filed before March 31st of each year. Preference in the selection of students for scholarships shall be given to the sons and daughters of clergymen, school teachers, Officers, Non-Commissioned Officers and Men (active or retired) who have served in Her Majesty's Military, Naval or Air Forces, graduates of the Royal Military College of Canada, members of the Engineering Institute of Canada, members of the Mining and Metallurgical Institute of Canada.

Mrs. R. B. White
Senior Trust Officer
Canada Permanent Trust Company
253 Bay Street
Toronto 1, Ontario

Tuition Refund Programs: A number of companies offer some form of tuition refund programs to employees attending university. Students should contact their Personnel Office for information.

Imperial Oil Higher Education Awards: Imperial Oil Limited offers annually free tuition and other compulsory fees to all children or wards of employees and annuitants who proceed to higher education courses. The courses may be taken at any Canadian university or other approved institution of higher learning. Each award is tenable until the attainment of a first degree or for a maximum of four years. To be eligible a student must attain an average mark of 70% or higher in the appropriate secondary school examinations in the subjects required for admittance to the approved institution, or must have attained an average of 70% or more in a college year upon which application is based. Further information and application forms may be obtained from:

The Secretary
Committee on Higher Education
Imperial Oil Limited
111 St. Clair Avenue West
Toronto 7, Ontario

Scholarship Guide for Commonwealth Postgraduate Students: Scholarships, grants, assistantships, etc. open to graduates of Commonwealth universities who wish to undertake postgraduate (including post-doctoral) study or research at a Commonwealth university outside their own country.

Write:

The Association of Commonwealth
Universities
36 Gordon Square
London, England WC1H 0PF

Awards for Commonwealth University Staff 1974-76: Fellowships, visiting professorships, grants, etc., open to university staff in a Commonwealth country who wish to carry out research, make study visits,

Faculty of Fine Arts, on the recommendation of the Faculty of Fine Arts. Apply to the Fine Arts Faculty.

The I.B.M. —Thomas J. Watson Memorial Bursaries: I.B.M. makes available $1,000. annually to each of a number of Canadian universities to provide undergraduate bursaries which are known as the I.B.M. Thomas J. Watson Memorial Bursaries. The objective of the programme is to provide financial assistance to needy undergraduates in any year of any faculty who are of good academic standing.

18.3.15 UNDERGRADUATE BURSARIES

Note: These awards are made on the basis of financial need subject to passing grade. All applications should be submitted to the Financial Aid Officer unless otherwise indicated.

Association of Alumni Bursary — $100.00 awarded annually to a student in any year as faculty on the basis of financial need.

Birks Family Foundation Bursaries: These bursaries are available to students recommended by the Scholarship Committee, in any faculty. They may be renewed annually, until graduation, to successful students. The number and amount of awards may vary from year to year depending on the funds available from the Foundation.

The Ethel Campbell —P.E.O. Memorial Bursary: Established by Colin C. Campbell in living memory of his wife, Ethel May Routledge Campbell, and in recognition of her dedication to the aims, objectives, and the moral principles of the P.E.O. Sisterhood. This award is to assist a female student toward the financing of her university programme.

The J. P. Copland Memorial Bursaries: In the day and evening division, to be awarded at the discretion of the Student Aid Committee on the basis of financial need and academic standing.

John Crawford (Administrative Management Society) Bursary: $100.00 will be awarded annually as a bursary to a deserving student in the evening division of the Commerce Faculty in memory of the late John Crawford, Charter member and first President, 1938-40, Montreal Chapter, National Office Management Association; International President, 1941-42, N.O.M.A. and lecturer at Sir George Williams for many years, and who showed an interest and devotion to matters of education worthy of special recognition by his associates in N.O.M.A.

Ralph B. Hood Bursary Fund: In the day and evening division, to be awarded at the discretion of the Student Aid Committee on the basis of financial need and academic standing.

Knights of Pythias (Syracuse No. 9 Bursary Fund: This fund was established by the Knights of Pythias to assist students in the day or evening division of the university.

National Council of Jewish Women of Canada Bursary-Loans: In the day or evening division, bursary awards are provided according to financial needs. It is expected that students will undertake to repay grants after graduation.

Theodore Ronis Memorial Bursary: This bursary of $50.00 is established by the friends of the late Theodore Ronis to perpetuate the memory of his friendship through the annual gift of a bursary to a deserving student. The recipient should be studying preferably but not necessarily towards a Bachelor of Commerce degree, and be a male student.

Royal Albert Lodge Bursary: The sum of $400.00 to be awarded as scholarship and bursaries to a) children of members of the Royal Albert Lodge, b) children of members of other Masonic Lodges. If neither A or B qualify, any worthy student may apply and receive the scholarship or bursary at the discretion of the Scholarship Committee.

St. Andrews Society of Montreal Bursary: The amount of $500.00 is available annually to a needy student of Scottish blood or descent studying in the day or evening division of any faculty.

Science Educational Assistance Fund: A number of bursaries are offered annually by the Science Students Association to their students. Minimum requirements are second year standing and financial need. Applications may be obtained from the S.S.A. Offices and should be returned to the Financial Aid Officer.

Uniroyal Limited Air-to-Education Program: Loan-bursaries are awarded annually on the basis of need to students who have completed a minimum of two years in university.

18.3.16 EXTERNALLY ADMINISTERED AWARDS

Note: "In most cases awards of a national nature are based on high school leaving grades as Quebec is the one province in Canada with a compulsory C.E.G.E.P. program. Wherever possible C.E.G.E.P. grades will be considered."

The Association of Universities and Colleges of Canada: The Association administers national and international aid programs on behalf of private and governmental donors. A complete listing of the programs administered by A.U.C.C. can be found in the Guidance Information Centre, Room 440, Henry F. Hall Building.

Harry F. Bennett Education Fund: The purpose of this Fund is to make loans to deserving students who need financial assistance to enable them to study Engineering Sciences at university level and who have proved themselves by successfully completing their first year in Engineering or the equivalent.

The Engineering Institute of Canada
2050 Mansfield Street
Montreal, Quebec

The Building Trades Joint Committee Scholarship: A five year scholarship is available to a student entering into the Faculty of Engineering. This award covers full tuition fees for five years subject to a satisfactory academic standing. Applicants must be the sons of employees engaged in the construction industry in the District of Montreal.

Mr. Armand Brisebois
Personnel & Office Manager
The Construction Industry
Joint Committee of the Region of Montreal
3530 Jean-Talon St. West
Montreal, Quebec

18.4 Ombudsman — Sir George Williams Campus

Regulations relating to: Rights and responsibilities of members of the University and the S.G.W. Ombudsman Office

18.4.1 General

1. The system set out herein consists of two related parts: a statement of rights and responsibilities of all who study, teach or work at the University, with associated complaint procedures; a statement governing the setting up and functioning of the SGW Ombudsman office.

2. These regulations apply to the Sir George Williams Campus, not to the Sir George Williams schools.

3. The system applies to students, faculty, administrators and all other employees of the University. However, it does not replace or supersede the terms of the University tenure regulations, the existing official grievance procedures, or any collective agreement that may apply to particular individuals or groups within the University.

a) These regulations do not replace or supersede the regulations relating to Termination of Employment of Faculty Members except as herein-after expressly provided.

b-i) Whenever a complaint has been lodged against a faculty member under these Regulations, no dismissal procedures arising from the same circumstances shall be set in motion against such faculty member under the Regulations Relating to Termination of Employment and Suspension of Faculty Members, except in the case provided for in paragraphe 7 (a) below.

ii) Paragraph (b-i) above shall not apply where a complaint, lodged against a faculty member under these Regulations, has been discontinued prior to its final disposition.

c) Whenever formal dismissal procedures have been initiated against a faculty member under the Regulations Relating to Termination of Employment and Suspension of Faculty Members, no complaint arising from the same circumstances shall be lodged against such faculty member under the present Regulations.

4. The ombudsman office is an essential part of this system. The manner in which the ombudsmen are to be appointed and their functions are set out in Section IV.

5. It is not only the right but the duty of faculty members and administrators to exercise their authority in areas that fall within their spheres of responsibility. Thus, for example, a faculty member has a responsibility to take whatever immediate action may be necessary to ensure the continuing order of his course just as the person responsible for an area of administration must take whatever immediate action may be necessary to ensure its proper functioning.

6. Although a faculty member or an administrator may take immediate action in the exercise of his responsibilities, such as referred to in the preceding paragraph, a person against whom such an action is directed may have recourse to the ombudsman office or to the complaint procedures set out below should he believe that the action was unjustified and that his rights were infringed upon.

7. Any disciplinary action taken by a faculty member or by an administrator other than the kind of immediate action referred to in paragraph 5 shall be taken by way of the complaint procedures set out below, subject to the Rector's right to suspend an individual pending the completion of such procedures.

a) Where the Rector suspends a faculty member, otherwise than upon a final recommendation flowing from a complaint lodged against such faculty member under these Regulations, the provisions of the Regulations Relating to Termination of Employment and Suspension of Faculty Members shall apply.

8. All those who study, teach or work at the University are subject to the laws of the land, and have recourse to those laws. The same holds true for the University as a corporate entity. In the event of an act which appears to be an infringement of an individual's legal rights, it must be the decision of that individual whether or not to take legal action, irrespective of whether he has recourse to the procedures set out herein. Similarly, the University, acting through its duly authorized representatives, itself has the right to take at any time any legal action considered appropriate.

9. Wherever there is doubt or ambiguity regarding any provision in these regulations, or the procedure to be followed, that interpretation or procedure shall be adopted which appears most equitable, consistent with the general purposes and philosophy of these regulations.

10. It is desirable that recourse be had to the procedures in Section III only when it has been impossible to reach an informal settlement of differences, with or without the assistance of the ombudsmen, or when the issue is clearly one that demands formal action.

18.4.2 Rights and Responsibilities:

1. A university is an institution of higher education dedicated to the pursuit of truth, and to the advancement and dissemination of knowledge. All those who study, teach or work there must be concerned with maintaining the freedoms essential to these purposes, notably the freedoms to teach; to engage in research; to create; to learn; to study; to speak; to associate and to assemble; to write and to publish. Rights and responsibilities emanate from these freedoms; the rights cannot be maintained unless the responsibilities are accepted.

2. A university has the rights of a duly incorporated institution of higher education, and it has responsibilities to those who are part of it. Each individual member also has rights and responsibilities.

3. To pursue its goals, a university requires protection againts disruption. Neither repression

or teach for a while at a university in another Commonwealth country.

Write:
The Association of Commonwealth Universities
36 Gordon Square
London, England WC1H 0PF

18.3.17 LOAN FUNDS AND ADDITIONAL ASSISTANCE

R.C.A.F. Benevolent Fund:

The Royal Canadian Air Force Benevolent Fund made provisions for loans for the benefit of former R.C.A.F. personnel or their dependents

Miss P. Mullaly
R.C.A.F. Benevolent Fund
685 Cathcart Street
Montreal, Quebec

Student Loan Fund:

This fund is administered on behalf of students by the Office of the Dean of Students. The Fund is to provide students with short term assistance with the maximum amount not exceeding $150.00. Students must demonstrate an ability to repay as contracted. Under no circumstances will loans be made for the purpose of paying tuition or registration fees. Application forms and additional information may be obtained from the Financial Aid Office — Room H-405

State Assistance for U.S. Students: Several of the States operate student assistance programs which include Concordia University. These awards are based usually upon residence and financial need. Students are advised to apply to the appropriate State Education Authority.

U.S. Veteran's Affairs Aid Program: Financial Aid is available to veterans of the United States Armed Forces by virtue of Public Law 89-358 and the G. I. Bill of 1966. Contact your local V. A. Officer if you have been in the service for over six months active duty since January 1, 1955. Veterans who have been on active duty more than 180 days since January 1, 1955, are entitled to one month of educational assistance for each month, or fraction thereof, of service up to a maximum of 36 calendar months. A veteran's education has to be completed within eight years from the date of his discharge.

is concluded that the allegations are well founded in whole or in part. Since a student can be suspended or expelled from the University only by action of the Rector, any such recommendation must be forwarded to the Rector.

a) Where the appropriate authority, or an individual or a committee assigned by him has concluded that the allegations were founded in whole or in part and has recommended that a faculty member be dismissed, the dismissal provisions of the Regulations Relating to Termination of Employment and Suspension of Faculty Members and not the provisions of paragraphs 12 to 17 below shall apply.

10. Both the complainant and the person complained against must be given the opportunity to make any relevant representations, in person or in writing as they see fit.

11. The decisions referred to in paragraph 9 must be written, signed and dated, and must be reasoned. The appropriate authority shall deliver such decisions to the complainant, the person complained against, the administrator to whom the appropriate authority, himself, reports and to the Dean of Students if a student is involved. The Chairman of the Board of Governors shall deliver his decisions to the Board as a whole.

12. Both the complainant and the person complained against have a right of appeal to the Board of Governors. Either party wishing to avail himself of the appeal procedure must deliver a written and signed notice of appeal to the Secretary of the Board of Governors within fourteen days of the rendering of the decision appealed against. This delay may be extended in exceptional cases by the Board of Governors upon application in writing by the person who wishes to appeal, but it shall not be extended unless that person could not reasonably have acted within the fourteen days. The appeal may be taken against either the decision on the merits or against the action taken or recommended, or against both. The notice must state in clear and precise terms the grounds on which the appeal is based.

13. The Secretary of the Board of Governors shall send without delay copies of the notice of appeal to the appropriate authority responsible for the decision which is being appealed, to the opposite party, and to the Dean of Students if a student is involved. The appeal shall be placed on the agenda of the next meeting of the Board.

14. Should the appeal be lodged by the complainant, or should it be lodged by the person complained against in a case where action other than a sanction of suspension, expulsion or dismissal has been imposed or recommended, the Board of Governors shall decide whether to deal with it directly or to set up a review board, composed of persons from either within or without the University or from both, as the Board of Governors judges fit. The decisions of the Board of Governors in the former case or of the review board in the latter case shall be final.

15. Should the person complained against wish to lodge an appeal in a case where a sanction of suspension, expulsion or dismissal has been imposed or recommended, he may choose either that the appeal be dealt with according to the procedure set out in the above paragraph or he may require the Board of Governors to appoint a committee of three persons from outside the University, one of whom must be a lawyer not otherwise in the employ of the University, to hear the appeal. Its decision shall be final.

16. Where the choice referred to in paragraph 15 is not made, the Board of Governors shall decide whether to deal with the appeal according to the procedure set out in paragraph 14 or that set out in paragraph 15.

17. The Secretary of the Board of Governors shall communicate the decision in writing to the persons referred to in paragraph 11.

18. Wherever reference is made above to an official of the University, and that official is unable to exercise his functions, the person who is replacing him shall carry out those functions.

19. Apart from the requirements to inform set out above, any proceedings or decisions in accordance with the provisions of Section III shall be treated as confidential unless all the parties involved expressly agree that they be made public.

18.4.4 The Ombudsman Office

1. The Ombudsman Office shall be composed of three persons already in the employ of the University. They shall be appointed by the Rector acting on the advice of a search committee named by him. The search committee shall be representative of all who study, teach and work at the Sir George Williams campus. Ombudsmen shall be eligible for reappointment by the Rector on the advice of a search committee.

2. Anyone who studies, teaches or works at the campus shall have the right to apply to the Ombudsman Office on any matter of concern to him. The members of the office shall decide between them which of them will handle any particular application or whether they will handle it jointly.

3. The ombudsmen shall be free to enquire into any matter thus brought to their attention, and to make whatever recommendations they judge appropriate.

4. It is expected that the ombudsmen will be able to resolve many problems and conflicts before they reach a stage where formal procedures are necessary. Once formal procedures have commenced, their role shall be limited to conciliation.

5. The appointment of the ombudsmen shall be for two years, and they will be released on a part-time basis from their regular functions.

6. On the conclusion of an enquiry, the Ombudsman Office shall provide the individual who applied for its services with a written report on its disposition of the matter.

7. The ombudsmen shall have the right to refuse to take up any case if for any reason they judge intervention inappropriate.

8. Recommendations of the ombudsmen may bear either on the actions or decisions of an individual or group or on the policies or practices which gave rise to such actions or decisions.

9. Any application to the Ombudsman Office and any subsequent enquiries or recommendations, shall be treated as confidential unless all the parties involved expressly agree that the information be made public.

10. The ombudsmen shall have immediate access to all University records, reports or other documents other than those which cannot be released for reasons of confidentiality. If the ombudsmen wish to challenge the decision of an officer of the University with regard to confidentiality they shall have the right of appeal to the Board of Governors. The ombudsmen shall maintain the confidentiality of confidential materials to which they have access.

11. The ombudsmen shall issue a report annually to the University in such a way as to indicate the nature and extent of their operations, while protecting the anonymity and confidence of any individuals who have applied to them or with whom the ombudsmen have been in contact regarding particular cases.

of minorities nor denial of the rights of the majority can be tolerated. Mutual consideration is vital if the freedoms set out above are to be preserved.

4. The individual may exercise his rights only to the extent that they do not infringe upon those of his fellows or of the University. This requires the acceptance of personal responsibility and in particular refraining from such acts as: destruction of property; invasion of premises; disruption of classes or meetings; prevention of free access to or egress from property belonging to or rented by the University; violence; assault and the threat of assault; libel and slander; discrimination against any person on the basis of sex, race, colour, creed or ethnic origin.

18.4.3 Complaint Procedures:

1. These procedures are applicable when there has been an alleged infringement of the rights of an individual or of a group of persons, or of the University itself.

2. Procedures are commenced upon the lodging of a formal complaint. The complaint must be made in writing, and must be signed by the complainant or complainants. The allegations must be stated therein with precision, including specific details as to date, time and place. The complaint must be delivered to the appropriate authority as defined below within a reasonable delay, and in no case more than three months after the incident or decision complained of.

a) Where the complaint involves an allegation of deception or dishonesty, the above delay shall begin to run from the date of the discovery by the complainant of the alleged deception or dishonesty.

3. The appropriate authority to whom a complaint must be delivered is as follows. This listing is subject to change as changes are made to the administrative structure of the University.

a) The Chairman of the Board of Governors in the event of a complaint against:
Rector;
Secretary of the Board of Governors.

b) The Rector in the event of a complaint against:
Vice-Rector, Academic;
Vice-Rector, Administration and Finance;
Vice-Rector and Principal of Loyola Campus;
Executive Assistant to the Rector;
Assistant to the Rector, Public Relations;
Dean of Students (SGW);
Secretary of Senate;
or anyone working directly for him on the Sir George Williams campus.

c) The Vice-Rector, Academic in the event of a complaint against: Sir George Williams Dean of Arts;
Sir George Williams Dean of Science;
Dean of Commerce and Administration;
Dean of Engineering;
Associate Vice-Rector, Academic;
Associate Vice-Rector, Academic Planning;
Assistant Vice-Principal, Academic;
or anyone working directly for him on the Sir George Williams campus.

d) The Vice-Rector, Administration and Finance, in the event of a complaint against:
Associate Vice-Rector, Administration;
Assistant Vice-Rector, Communications;
Assistant Vice-Rector, Relations and Audit;
Assistant Vice-Rector and Treasurer;
Assistant Vice-Rector and Director of Libraries;
Director of Guidance (SGW);
or anyone working directly for him on the Sir George Williams campus.

e) The Vice-Rector and Principal of Loyola Campus in the event of a complaint against:
Registrar;
or anyone working for him on the Sir George Williams campus.

f) The Associate Vice-Rector, Administration in the event of a complaint against:
Assistant Vice-Rector, Physical Resources;
Assistant Vice-Rector, Ancillary Services;
or anyone working directly for him on the Sir George Williams campus.

g) The appropriate Dean in the event of a complaint against a member of faculty, whether full-time or part-time, or in the event of a complaint against anyone else employed in the Faculty for which he is responsible.

h) The administrator listed above as reporting to either the Rector or one of the Vice-Rectors in the event of a complaint against an individual employed in the department or departments for which he is responsible. In this connection, the following allocation of responsibility should be noted:
Executive Assistant to the Rector — Information and Bookings Centre;
Assistant to the Rector, Public Relations — Information and Development Offices;
Dean of Students (SGW) — Athletics Department; Health Centre;
Associate Vice-Rector, Administration — Security Purchasing, Receiving and Shipping, Mail and Printing Departments;
Assistant Vice-Rector, Communications — Personnel Department; Computer Centre; Centre for Instructional Technology; Telephone Services;
Assistant Vice-Rector, Ancillary Services — Food Services; Bookstore.

i) The Dean of the Faculty in which the student is enrolled, in the event of a complaint against a student by a non-student member of the University.

j) The Dean of Students (SGW), in the event of a complaint by one student against another.

4. When a complaint has been made by a non-student member of the University against a student, the Dean of the Faculty in which the student is enrolled shall so inform the Dean of Students, and he shall keep him informed of the progress of the case.

5. When a complaint has been made by one student against another, the Dean of Students shall so inform the Dean of the Faculty in which the student is enrolled, and he shall keep him informed of the progress of the case.

6. In the event of a complaint against a graduate student, the Dean of Students shall so inform the Dean of Graduate Studies, and he shall keep him informed of the progress of the case.

7. If one of the persons named as an appropriate authority wishes to lay a complaint against an individual who comes within his own sphere of authority he must address himself to his own immediate superior.

8. The appropriate authority shall acknowledge receipt of the complaint as expeditiously as possible. He shall send copies both of the complaint and of his acknowledgement to the person complained against. If the complaint has been made against a student, a copy of the acknowledgement shall also be sent to the Dean of Students.

9. The complaint shall be enquired into in whatever manner the appropriate authority considers most suitable. The appropriate authority may conduct the enquiry himself or he may assign the enquiry to another individual or to a committee named by him. If the appropriate authority or the individual or the committee concludes that the allegations are founded in whole or in part, the appropriate authority shall take whatever action he deems suitable in so far as he is empowered to do so, or recommend such action to those who have the power to implement it. If the appropriate authority has assigned the enquiry to an individual or to a committee, he may also assign to that individual or committee the function of taking or recommending appropriate action in cases where it

41 Sir George Williams Faculty of Arts

41.3 Degree Requirements

Definition of Credit

Up to and including the academic year 1973-74, degree programmes have been expressed in terms of courses, with one credit being applied to a "full course" (normally two terms) and one half-credit being applied to a "half-course" (normally one term).

Starting in 1974-75, in accordance with the recommendations of the Quebec Council of Universities, the credit-base is being modified to take into account the total activity of the student. Students preparing for the degree of Bachelor of Arts will take a minimum of 90 credits. Each credit represents, for the average student, a minimum of 45 hours of work spread across lectures, conferences, laboratories, studio or practice-periods, tests, examinations and personal work.

Graduation with the degree of Bachelor of Arts requires:

1. Successful completion of a programme of concentration in the form of a specialization, a double minor, a major or an honours programme as listed below.
2. A maximum of 48 credits at the 200-level out of the 90 credits required for the degree.
3. Students taking a double minor, an interdisciplinary major, a departmental major a specialization, or a departmental honours may take no more than 66 of their 90 course-credits in one department, and no more than 78 in one division (i.e. Humanities Division or Social Sciences Division).
4. Students taking an interdisciplinary honours programme or a combined honours programme must take at least 18 course-credits outside of their division, and outside of their departments of concentration if the respective departments are in different divisions.

Concentration Requirement

Since the CEGEP programme is designed to give all students the opportunity to explore different fields and thus acquire a broad general basis for further study, the undergraduate programme in Arts requires some degree of concentration, according to the interests and capacities of the student. The four main forms of concentration are the minor, the major, the specialization, all of which require that the student be successful in a prescribed pattern of courses, and honours, which involves not only a greater degree of concentration, but also a high level of academic performance.

In order to graduate, therefore, a student must have completed one of the following types of programmes: a double minor; an interdisciplinary major programme; a departmental major programme; a specialization; a combined honours programme; an interdisciplinary honours programme; a departmental honours programme.

Prior to registration, students will be required to select one of the types of programmes outlined above. In the case of honours, students will register upon entry in an honours *programme*, but their acceptance as honours students will depend on their performance during their first year. Students failing to meet requirements for honours standing will proceed as majors.

The requirements of selecting upon entry a programme of concentration should not be thought of as being necessarily a final commitment. The Arts programme is designed to be flexible enough to allow for changes of orientation, subject, of course, to limitations in the case of certain programmes in great demand.

41.4 Programmes

Honours Programmes are listed beginning § 41.5
Specialization Programmes beginning § 41.6
Major Programmes are listed beginning § 41.7
Minor Programmes are listed beginning § 41.8

Programme Advisors

Applied Mathematics (Optimization)
J. SENEZ

Applied Social Science
R. McDONALD

Art History
D. ANDRUS

Asian Studies
D. MILLER

Canadian Politics
H. SHULMAN

Canadian Studies
R. BURNS

Cinema
J. LOCKE

Comparative Political Studies
H. SHULMAN

Economics
P. MILES
M. STELCNER

Early Childhood Education
D. WHITE

Education
F. FRIEDMAN

English
E. PECHTER

French
C. LÉVY

French/English Translation
A. JORDAN

Geography
H.A. CLINCH

German
A. M. KETTER

Greek
P. F. WIDDOWS

Hebrew
J. A. MACALUSO

History
R. I. DIUBALDO

41.1 Sir George Williams Faculty of Arts

Dean
IAN L. CAMPBELL
Associate Dean (Priorities)
MURIEL ARMSTRONG
Associate Dean (Curriculum)
MICHEL DESPLAND
Assistant Dean (Students)
GERALD MAHONEY
Assistant to the Dean
MONA OSBORNE

41.2 Curriculum for the Degree of Bachelor of Arts

Admission Requirements

General admission requirements are listed in § 13.

Specific requirements for admission to the various programmes leading to the degree of Bachelor of Arts are listed below. Students lacking one or more of these prerequisites may be admitted, but they must include these courses in their undergraduate programmes towards which they will be credited.

Programme titles refer to honours, majors and minor components where these exist.

Applied Social Science Geography Urban Studies	One full course in Mathematics at the Collegial level or the equivalent.
EARLY CHILDHOOD EDUCATION	No official prerequisites but it is recommended that students take at the Collegial level one full course in each of Psychology, Sociology and Philosophy.
English	Compulsory Collegial language and literature courses (two full courses).
Psychology	One full course in Mathematics and Biology 001 (CEGEP 301 or 921) and Psychology 011 (CEGEP 101 and 201).
Social Psychology	One full course in Mathematics and Psychology 011 (CEGEP 101 and 201).
Art History Cinema Minor Theatre Arts Minor Visual Arts	One full course in English literature at the Collegial level (in addition to compulsory Collegial language and literature courses).
Minor	One full course in Collegial French or the equivalent.
French French/English Translation	One full course in English literature at the Collegial level (in addition to compulsory Collegial language and literature courses). One full course in Collegial French.
German Greek Hebrew Italian Latin Russian Spanish	At least one, and preferably two, full courses in the language(s) to be studied.
Mathematics	Mathematics 003, 004, 005 (CEGEP 103, 105, 203).

NOTE: One full course represents two term courses.

Asian Studies Canadian Politics Canadian Studies Economics Education (Minor) History International Affairs Journalism Judaic Studies Linguistics Music Philosophy Political Philosophy Political Science Religion Russian Studies Science and Human Affairs Social Welfare Sociology and Anthropology Urban Studies Women's Studies	No requirement.

NOTE: Quebec universities have agreed to admit to the appropriate undergraduate programme any collegial student successfully completing one of the above programmes provided of course that resources are sufficient. When all such qualified students have been admitted, the university reserves the right to admit students who may not have all the specified prerequisites according to its own criteria.

41.4.5 Departmental Representatives

Art History
Sandra Paikowsky,
Assistant Professor of Fine Arts

Economics
Morton Stelcner,
Associate Professor of Economics

Education
William Knitter,
Professor of Education

English
Edward Pechter,
Associate Professor of English

French
Albert Jordan,
Associate Professor of French

Geography
Harry A. Clinch,
Associate Professor of Geography

History
Richard J. Diubaldo,
Assistant Professor of History

Mathematics
Norman E. Smith,
Professor of Mathematics

Philosophy
Christine Garside,
Assistant Professor of Philosophy

Political Science
Harvey Shulman,
Assistant Professor of Political Science

Psychology
Thomas Gray,
Associate Professor of Psychology

Religion
David Miller
Associate Professor of Religion

Sociology and Anthropology
John Jackson,
Associate Professor of Sociology

41.5 Honours Programmes

54 BA Honours in Anthropology

Year I
6 Anth 211[6]
6* Ling N-221[6]
Int St/Geog. N-341[6]
Int St/Anth. N-333[6]
Soc 210[6]
6 Soc N-241[6], N-420[6], N-440[6], N-444[3], N-445[3], N-455[3], N-471[6]

Year II
6 Anth N-434[6]
12 Anth N-425[6], N-458[6], N-459[6], N-461[6]

Year III
6 Anth N-499[6]
12 Anth N-421[6], N-462[6], N-464[3], N-465[3], N-466[3], N-467[3], N-468[6]
6 Anth electives

**Students must take Soc N-210 in Year I if they do not have CEGEP equivalent.*

72 BA Honours in Applied Mathematics

Year I
24 Math N-241[6], N-261[6], N-281[6], N-292[6].

Years II
18 Math: N-311[3], N-351[3], N-361[6], N-372[3], N-373[3].
6 *Option A:* N-331[6].
Option B: N-312[3], N-366[3].

Year III
6 Math N-433[3], N-434[3]
18 *Option A:* N-312[3], N-431[6], N-432[3], six credits approved by the Department.
Option B: N-353[3], N-472[3], N-473[3], N-474[3], N-461[6].

International Affairs
P. J. ARNOPOULOS

Italian
J. A. MACALUSO

Journalism
T. B. A.

Judaic Studies
MICHAEL OPPENHEIM

Latin
P. F. WIDDOWS

Linguistics
C. R. BARTON

Mathematics
J. SENEZ

Music
P. COHEN

Philosophy
J. ORNSTEIN

Political Science
H. SHULMAN

Political Philosophy
H. HUTTER

Psychology
J. CHAIKELSON
A. HILTON
N. TAYLOR

Religion
D. M. MILLER

Russian
T. SIDOROW

Russian Studies
I. SMITH

Science and Human Affairs
G. BINDEN

Social Psychology
T. GRAY

Social Welfare
R. McDONALD

Sociology
A. SYNNOTT

Spanish
J. D. GRAYSON

Statistics
T. DWIVEDI

Theatre Arts
N. SPRINGFORD

Undergraduate Scholars Programme
T. B. A.

Urban Studies
T. BUCKNER

Visual Arts
G. COWARD
D. JONES
J. I. SMITH
B. WAINWRIGHT

Majors Programmes

A "major" is an approved *sequence* of courses. It includes a minimum of 42 credits and a maximum of 60. The concentration may include certain approved courses in other closely related fields. The term "major" as used by Concordia University implies that the student has followed, within the requirements for the degree, a planned programme in a specialized field.

Honours Programmes

The university has approved programmes leading to an honours degree in certain selected fields. An honours degree indicates specialization within a field, and high academic standing. In order to qualify for an honours degree a student must meet all of the academic qualifications and comply with the regulations set forth below.

1. A candidate for an honours degree should indicate such intention at registration and consult the honours representative of the department(s) concerned as soon as possible. Acceptance as an honours student will depend on performance during the first year. The honours standing will be reviewed annually.
   A student who has followed the courses prescribed for the honours programme and has met all the requirements may enter the programme with the approval of the honours representative any time before beginning the final 30 credits. No retroactive approval of entry may be made.
2. A student who enters with advanced standing may apply pro tanto credits which are applicable to the honours degree requirements, upon approval by the department(s).
   A transfer student must complete a minimum of 30 credits in the basic honours programme in residence to receive a degree with honours.
3. An honours student must maintain a 'B' average with no grade lower than 'C' in all courses in the basic honours programme.
   An honours student must meet the general degree requirements as well as the specific requirements for an honours degree, and must obtain at least a 'C' average over the total degree programme.
   Failure in any course will mean suspension or withdrawal from the honours programme. Students who fail to meet acceptance requirements and who are required to withdraw from the honours programme will proceed as majors. Reinstatement into the honours programme is possible only by recommendation by the honours representative.
4. A student shall be allowed to qualify for only one honours degree in either a single or combined honours programme.
5. A degree with honours in any programme is granted upon graduation only with the approval of the Senate.

Honours Committee

Professor
ROGER B. ANGEL *Chairman*

Assistant Professor
E. BRIAN MARKLAND

Professor
JANE STEWART

Professor
NORMAN E. SMITH

Secretary
MONA OSBORNE

60 BA Honours in French

Pattern B (Linguistics emphasis)

24 Fr N-241[6], N-310[6], N-321[6], N-331[6]
24 Fr N-312[6], N-314[6], N-410[6], N-417[6]
12 Fr electives at '300' or '400' level

60 BA Honours in Geography

Pattern C (Economic Geography)

Year I
18 Geog N-211[6], N-260[3], N-261[3], N-271[6]

Year II & III
12 Geog N-362[3], N-391[3], N-341[6]
18 Geog N-331[6], N-350[3], N-355[6], N-357[6], N-434[6], N-451[6], N-457[3]
6 Geog electives (excluding those listed above)

Year III
6 Geog N-491[6]

Students following this pattern may specialize in Urban Geography.

BA Honours in History and Religion

(See Religion and History)

60 BA Honours in Geography

Pattern A (Physical Geography)

Year I
18 Geog N-211[6], N-260[3], N-261[3], N-271[6]

Years II & III
12 Geog N-362[3], N-391[3], N-341[6]
18 Geog N-371[6], N-372[6], N-373[6], N-475[3], N-476[3]
6 Geog electives (excluding those listed above)

Year III
6 N-491[6]

60 BA Honours in History

Year I
6 Hist N-210[6]
6 Hist electives at '200' level
6 Electives Hist at '200' level or related disciplines (with approval of Department)

Year II
6 Hist N-390[6]
12 Hist electives*

Year III
6 Hist N-490[6]
6 Hist electives at '400' level
6 Hist electives
6 Electives in Hist or related disciplines (with approval of the Department)

**Not more than 18 credits in History may be taken at the '200' level*

72 BA Honours in Mathematics

Year I
24 *Math N-241[6]*, N-261[6], N-281[6], N-291[3], N-372[3].

Year II
18 Math N-361[6], N-366[3], N-373[3], N-381[3], N-391[3].

Year III
18 Math N-461[6], N-466[3], N-467[3], N-491[3], N-492[3].
12 Twelve credits in Year II and Year III chosen from among Math N-311[3], N-312[3], N-321[3], N-322[3], N-331[3], N-351[3], N-392[3], N-431[6], N-432[3], N-433[3], N-451[3], N-471[3], N-475[3]; courses in related fields with prior Departmental approval.

60 BA Honours in Geography

Pattern B (Human Geography)

Year I
18 Geog N-211[6], N-260[3], N-261[3], N-271[6]

Year II & III
12 Geog N-362[3], N-391[3], N-341[6]
18 Geog N-316[6], N-321[6], N-322[6], N-412[6], N-422[6], N-423[6]
6 Geog electives (excluding those listed above)

Year III
6 Geog N-491[6]

Students following this pattern may specialize in Historical Geography.

BA Honours in History and Philosophy

(See Philosophy and History)

60 BA Honours in Philosophy

Year I
6 Phil N-211[6]
6 Phil N-210[6], N-221[6], N-231[6], N-273[6]

Year II
6 Phil N-221[6], N-321[6]
6 Phil N-380[6]
6 Phil N-301[6], N-401[6], N-403[6]
6 Phil electives

Year III
6 Phil N-405[6]
6 Phil N-369[6], N-421[6]
6 Phil N-407[6], N-409[6], N-431[6]
6 Phil electives at '300' or '400' level

Students preparing for graduate work should acquire a good reading knowledge of a related modern language.

60 BA Honours in Economics

6	Econ N-209[3] and Econ N-210[3]
18	Econ N-311[6], N-318[6], N-415[6]
6	Econ N-270[3] or Math N-203[3]* and Econ N-271[3] or Math N-206[3]
6	Math N-207[3] and Econ N-375[3] or QM 243[3] and 244[3]
6	Econ N-430[6], N-434[6], N-438[6]
18	Econ electives

**Students who take Math N-203[3] must, in addition, take Math N-205[3]*

72 BA Honours in Education and Philosophy

	Year I
9	Ed N-210[6], N-230[3]
12	Phil N-210[6] or N-211[6]; Phil N-221[6] or N-231[6]
	Year II
6	Ed N-430[6]
6	Phil N-380[6]
6	Ed N-421[6], N-441[6], N-451[6]
6	Phil N-231[6], N-368[3], N-378[3], N-431[6]
	Year II
6	Ed N-480[6]
6	Phil electives at '400' level, excluding Phil N-493, N-495
3-6	Ed N-490[3], N-491[3], N-492[3], N-493[3]
6	Phil N-369[6]
	Year II or III
3-6	Ed N-415[3], N-416[3], N-417[3]

60 BA Honours in English

6*	Engl N-241[6], N-260[6], N-262[6], N-263[6], N-267[6]
6	Engl N-231[3], N-232[3], N-281[6], N-282[6], N-283[6], N-287[6]
18	Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-460[6], N-466[6]
6	Engl N-374[6], N-375[6], N-376[6]
6	Engl N-244[6], N-343[6], N-344[6], N-348[6], N-440[6]
12	Engl electives (excluding N-211, N-311)
6	Engl electives at '400' level

**One of Engl N-225[6], N-226[6], N-227[6] may be substituted for one of these courses. NOTE: At least 36 credits must be taken at the '300' or '400' level.*

72 BA Honours in English and Philosophy

18	Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-374[6], N-375[6], N-487[6]
18	Engl N-231[3], N-232[3], N-244[6], N-344[6], N-348[6], N-351[6], N-353[6], N-356[6], N-363[6], N-367[6], N-376[6], N-430[6], N-448[3], N-456[3], N-459[6], N-460[6], N-466[6], N-476[6]
6	Phil N-210[6], N-211[6] or, if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6], N-369[6]
6	Phil N-231[6], N-271[6], N-273[6], N-301[6], N-361[6], N-369[6], N-372[3], N-374[3], N-376[3], N-378[3]
6	Phil N-369[6], N-405[6]
6	Phil N-321[6], N-365[6], N-396[3], N-401[6], N-403[6], N-405[6], N-407[6], N-431[6], N-493[6], Int St N-241[3], N-242[3]

60 BA Honours in English and Religion

12	Engl N-333[6], N-430[6]
6	Engl N-375[6] or N-376[6]
6	Engl N-244[6], N-334[6], N-335[6], N-336[6], N-337[6], N-348[6], N-374[6], N-375[6], or N-376[6]
12	Rel N-301[3], N-302[3], N-341[6]
6	Rel N-211[6], N-213[6], N-361[6], N-362[6], N-363[6]
6	Rel N-443[6], N-465[6]
6	Rel N-311[6], N-312[6], N-313[6], N-325[3], N-326[3], N-327[3], N-328[3], N-330[3], N-361[6]

60 BA Honours in French

	Pattern A (Literature emphasis)
36	Fr N-214[6], N-241[6], N-310[6], N-321[6], N-331[6], N-491[6]
24	Fr Literature electives

66 BA Honours in Political Sociology

18	Soc N-210[6], N-301[3], N-302[3], N-447[6]
18	Pol Sc N-240[6], N-311[6], N-413[6]
12	Soc N-430[6], N-431[6], Pol Sc N-320[6], N-415[6]
12	Soc N-440[3], N-441[3], N-443[6], N-446[6], N-455[6], N-471[6], Pol Sc N-333[6], N-334[6], N-335[3] and N-436[3], N-351[6], N-458[6]
6	Soc N-481[6], Pol Sc N-491[6]

BA Honours in Religion and English

(See English and Religion)

60 BA Honours in Psychology

Year I

18	Psy N-241[6] or N-242[6], N-273[6]*, N-412[6]

Year II

18	Psy N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-461[6] (Psy N-375[3] may be taken in addition.)

Year III

12	Psy N-413[6], N-472[6]
6	Psy N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-481[6], N-482[6], N-491[3], N-492[3], N-493[3], N-494[3]
6	Psy electives

*Students who have taken Psy N-271 in Yr I and who are then accepted into the honours programme will be exempted from Psy N-273, but may be requested to take Psy N-471 in Yr II.

66 BA Honours in Religion and History

Pattern A (Asia)

30	Hist N-210[6], N-261[6], N-361[6], N-362[6], N-390[6]
24	Rel N-213[6], N-311[6], N-312[6], N-313[6]
12	Soc* N-210[6], N-424[6]

NOTE: (a) With the approval of the honours representative, any 6 credits at '400' level Hist or Rel may be substituted for any specific course. (b) For students interested in the comparative aspects of Islamic development, Hist N-365[6] is available.

Pattern B (Europe)

12	Hist N-210[6], N-390[6]
6	Rel N-211[6], N-213[6]
42	Hist N-331[6], N-332[6], N-333[6], N-336[6], Rel N-327[3], N-328[3], N-330[3], N-361, N-362[6], N-443[6], Soc* N-210[6], N-424[6]

**Students taking Soc N-210 in honours programme must also take Soc N-424*

60 BA Honours in Religion

12	Rel N-211[6], N-213[6]
12	From one of three areas of specializations: A. Asian Religions: Rel N-311[6], N-312[6], N-313[6]. B. Christianity: Rel N-301[3], N-302[3], N-361[6], N-362[6], N-363[6] C. Judaism: Rel N-301[3]3, N-302[3], N-325[3], N-326[3], N-327[3], N-328[3], N-329[3], N-350[3]
6	Electives from courses specified in a second area above
6	Rel N-331[3], N-332[3], N-333[3], N-334[3], N-341[6], N-364[6], N-435[6], N-443[6], N-465[6]
6	Electives in chosen area of specialization at '400' level
6	Rel electives at '300' or '400' level
12	Electives in Rel or related discipline (in consultation with departmental honours advisor)

BA Honours in Religion and Philosophy

(See Philosophy and Religion)

BA Honours in Philosophy and Education

(See Education and Philosophy)

BA Honours in Philosophy and English

(See English and Philosophy)

66 BA Honours in Philosophy and History

Year I
6 Hist N-210[6]
6 Phil N-211[6]

Year II
6 Hist N-390[6]
12* Hist N-333[6], N-335[6], N-336[6]
6 Phil N-380[6]
6 Phil N-301[6], N-401[6], N-403[6]

Year III
6 Hist N-490[6]
6 Phil N-405[6], N-407[6]
6 Hist electives at '400' level (in consultation with departmental honours advisor.)
6 Phil electives at '300' or '400' level (in consultation with department honours advisor.)

**Six of these credits may be taken in Year III.*

72 BA Honours in Philosophy and Religion

12 Rel N-211[6], N-213[6], N-301[3], N-302[3]
6 Rel N-443[6]
6 Rel N-363[6], N-364[6]
6 Rel N-361[6], N-362[6], N-465[6]
6 Rel N-311[6], N-312[6], N-313[6], N-326[3], N-327[3], N-328[3], N-491[6], N-492[6]
6 Phil N-210[6], N-211[6] of, if exempted, Phil elective
6 Phil N-380[6]
6 Phil N-221[6], N-321[6], N-369[6]
6 Phil N-369[6], N-405[6]
6 Phil N-231[6], N-271[6], N-273[6], N-301[6], N-361[6], N-365[6], N-369[6], N-372[3], N-374[3], N-376[3], N-378[3]
6 Phil N-321[6], N-365[6], N-396[3], N-401[6], N-403[6], N-405[6], N-407[6], N-431[6], N-493[6]

BA Honours in Philosophy and Sociology

(See Sociology and Philosophy)

60 BA Honours in Political Science

24 Pol Sc N-240[6], N-270[6], N-320[6], N-330[6]
12 Pol Sc N-415[6], N-491[6]
6 Pol Sc, Area I electives
6 Pol Sc, Area II electives
6 Pol Sc, Area III electives
6 Pol Sc, Area IV electives

60 BA Honours in Sociology and Religion

18 Anth N-211[6]; Rel N-213[6]; Soc N-210[6]
6 Rel N-301[3], N-302[3], N-363[6]
12 Rel N-311[6], N-312[6], N-313[6], N-326[6], N-327[3], N-328[3], N-330[3], N-361[6], N-362[6]
12 Rel N-491[6]; Soc N-430[6] or N-431[6]; Soc N-481[6]
6 Anth N-425[6]; Soc N-424[6], N-443[6], N-446[6], N-494[6]
6 Soc electives (in consultation with Department Honour's Advisor)*

**Students preparing for graduate work should acquire a good reading knowledge of French, German, Greek, Hebrew or Latin.*

75 BA Honours in Statistics

Year I
24 Math N-241[6], N-261[6], N-281[6], N-291[3], N-372[3].

Year II
21 Math N-351[3], N-352[3], N-361[6], N-366[3], N-381[3], N-391[3].

Year III
18 Math N-373[3], N-451[3], N-452[3], N-461[6], N-466[3].
12 Twelve credits in Year I and Year II chosen from among Mathematics N-311[3], N-312[3], N-321[3], N-331[6], N-341[3], N-342[3], N-343[3], N-431[6], N-441[3], N-467[3], N-471[3], N-491[3], N-492[3], courses in related fields with prior Departmental approval.

72 BA Honours in Urban Studies

6 Econ N-209[3], N-210[3]
3 Econ N-426
12 Geog N-211[6], N-331[6]
6 Int St N-491[6]
6 Pol Sc N-240[6], N-330[6]
6 Pol Sc N-334[6]
15 Soc N-210[6], N-411[6], N-448[3]
3-6 Econ N-375[3] or Geog N-362[3] or Soc N-241[6]
3-6 Econ N-274[3], N-375[3]; Geog N-260[3], N-261[3]; Pol Sc N-320[6]; Soc N-441[3]
9* Econ N-304[3], N-305[3]; N-427[3], N-446[3]; Geog N-355[6], N-434[6], N-457[3]; Pol Sc N-333[6]; Soc N-440[3], N-450[6], N-449[3], N-454[6]

**(a) Not more than 15 credits may be taken in any one department.*
(b) Substitutes may be made with permission of the Coordinator.

41.6 Specialization Programmes

111 BA Specialization in Applied Mathematics

The following courses, in an approves sequence, constitute a Specialization in Applied Mathematic

Year I
24 Math N-241[6], N-261[6], N-270[6], N-281[6]

Years II and III
87 Math N-292[6], N-311[3], N-312[3], N-351[3], N-361[6], fifteen credits chosen from among N-331[6], N-341[3], N-353[3], N-354[3], N-366[3], N-371[3], N-372[3], N-373[3], N-381[3], N-431[6], N-432[3], N-433[3], N-434[3], N-442[3], N-451[3], N-461[6], N-471[3], N-474[3], N-482[3]

60 BA Specialization in Mathematics

The following courses, in an approved sequence, constitute a Specialization in Mathematics

Year I
24 Math N-241[6], N-261[6], N-281[6], N-292[6]

Year II and III
27 Math N-372[3], N-373[3], N-361[6], N-366[3], N-381[3], N-391[3], N-466[3], N-491[3]
9 Math elec or, in related fields approved by the department.

60 BA Specialization in Statistics

The following courses, in an approved sequence constitute a Specialization in Statistics:

Year I
24 Math N-241[6], N-261[6], N-281[6], N-290[3], N-372[3]

Year II and III
18 Math N-311[3], N-341[3], N-343[3], N-351[3], N-352[3], N-441[3],
18 Eighteen credits in Mathematics or related fields, approved by the Department.

BA Honours in Religion and Sociology

(See Sociology and Religion)

60 BA Honours in Russian Studies

6	Econ N-209[2], N-210[3], N-221[6]
6	Econ N-465[3], N-464[3]
18	Russ N-210[6], N-241[6], N-311[6]
12	Hist N-341[6], N-445[6]
6	Geog N-343[6]
12	Russ N-351[6], N-452[6], N-453[6], N-454[3], N-455[3]; Phil N-365[6]; Pol Sc N-353[6]

66 BA Honours in Social Psychology

Year I

6	Psy N-241[6], N-242[6]; Soc N-241[6]
6	Psy N-273[6]*
6	Psy N-412[6]; Soc N-430[6]
12	Soc N-210[6], N-301[3], N-302[3]

Year II

6	Soc N-420[6] (if Yr I Psy N-412); Psy N-442[6] (if Yr I Soc N-430)
6	Soc N-422[6], N-433[6], N-446[6]
6	Psy N-422[6], N-432[6], N-434[6]

Year III

6	Psy N-428[6], Soc N-411[6]
6	Psy N-472[6]; Soc N-481[6]
6	Electives Anth, Soc, Psy

**Students who have taken Psy N-271 in Yr I and who are then accepted into the honours programme will be exempted from Psy N-273, but may be requested to take Psy N-471 in Yr II.*

60 BA Honours in Sociology

Year I

6	Soc N-210[6] or, if exempted, Soc elective (in consultation with Honours Advisor)
12	Soc N-241[6], N-301[3], N-302[3]

Year II

6	Soc N-411[6]
6	Soc N-430[6], N-431[6]
6	Soc electives, Area II
6	Soc electives, Area IV

Year III

6	Soc N-481[6]
12	Electives in Soc and Anth (in consultation with Honours Advisor)*

**With prior approval of the Honours Advisor the student may substitute some or all of these credits with credits from a related discipline(s)*

69 BA Honours in Sociology and Philosophy

Pattern A (Epistemology and Methodology)

6	Soc N-210[6] or, if exempted, Soc electives
6	Soc N-241[6], N-301[3], N-302[3]
12	Soc N-411[6], N-481[6]
6	Soc N-420[6], N-430[6], N-431[6]
6	Soc N-422[6], N-494[6]
6	Phil N-210[6], N-211[6], N-221[6] or, if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6]
6	Phil N-369[6], N-405[6]
3	Phil N-372[3], N-374[3], N-376[3]
6	Phil N-321[6], N-369[6], N-401[3], N-405[6], N-421[6], N-493[6]

72 BA Honours in Sociology and Philosophy

Patterns B (Man in Society)

6	Soc N-210[6] or, exempted, Soc elective
6	Anth N-211[6] or, exempted, Anth elective
12	Soc N-420[6], N-481[6]
6	Soc N-421[6], N-422[6]; Anth N-423[6]
6	Soc N-442[6], N-443[6], N-444[3], N-445[3], N-446[6], N-447[6], N-454[6]
6	Phil N-210[6], N-211[6] or, if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6], N-369[6]
6	Phil N-372[3], N-374[3], N-376[3], N-378[3]
12	Phil electives

48 BA Major in Canadian Studies

6 Int St N-211[6]
6 Engl N-244[6]
6 Fr N-211[6]
6 Hist N-221[6]
6 Int St N-411[6]
18* Engl N-344[6], N-448[3]; Art N-249[6], N-444[6]; Music N-345[3]; Fr N-331[6], N-431[6], N-432[6], N-465[3]; Geog N-341[6]; Rel N-363[6]; Econ N-434[6], N-446[3]; Ed N-442[3]; Hist N-321[6], N-322[6], N-323[6], N-325[6], N-326[6], N-421[6]; Pol Sc N-330[6], N-335[3], N-436[3], N-437[3]; Soc N-445[3], N-470[3], N-471[6]; Anth N-462[6]

**More than 18 credits may be chosen*

42 BA Major in Economics

6 Econ N-209[3] and N-210[3]
6 Econ N-311[6]
6 Econ N-318[6]
6 Econ Hist chosen from Econ N-430[6], N-434[6], N-438[6]
6 Maths N-207[3] and Econ N-375[3], or QM-243[3] and QM-244[3], or equivalent
12 Econ Electives

72 BA Major in French/English Translation

18 Fr N-214[6], N-310[6], N-429[6]
18 Engl N-211[6], N-311[6], N-337[6]
6 Fr N-222[6], N-241[6], N-321[6], N-331[6]
6 Engl N-241[6], N-244[6], N-356[6]
24 Fr N-314[6], N-415[6], N-440[3], N-441[3], N-442[3], N-443[3]

60 BA Major in Early Childhood Education

33 Ed N-202[6], N-261[6], N-315[6], N-453[6], N-460[6], N-461[6]
12 Art N-251[6]; Music N-421[6]
6 Ed N-421[6], N-430[6], N-441[6], N-451[6] (in consultation with Department)
6 Ed N-415[3], N-416[3], N-417[3] (in consultation with Department)
3 Psy N-212[3], N-213[3], N-214[3], N-215[3], N-302[3], N-303[3], N-304[3], N-305[3], N-402[3], N-403[3] (in consultation with Department)

NOTE: Every student unless specifically exempted by the director of the programme is required to undertake an internship in the third year as well as internships or workshops in Education N-202, N-215, N-261 and Music N-421.

54 BA Major in English

6 (A)* Engl N-241[6], N-260[6], N-262[6], N-263[6], N-267[6]
or (B) Engl N-281[6], N-282[6], N-283[6], N-287[6], N-231[3], N-232[3]
18 Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-460[6], N-466[6]
6 Engl N-374[6], N-375[6], N-376[6]
6 Engl N-244[6], N-343[6], N-344[6], N-348[6], N-440[6]
18 Engl electives at '300' and '400' level (excluding N-311)

**One of Engl N-225[6], N-226[6], N-227[6] may be substituted for one course in (A).*

42 BA Major in Geography

18 Geog N-211[6], N-260[3], N-261[3], N-271[6]
12 N-341[6], N-362[3], N-391[3]
12 Geog Electives

48 BA Major in Comparative Political Studies

12 Pol Sc N-240[6], N-458[6]
24 Pol Sc N-321[6], N-330[6], N-333[6], N-334[6], N-350[6], N-351[6], N-353[6], N-355[6]
12 Electives with relevant comparative or area studies content (with approval of the Department)

48 BA Major in French

6 Fr N-214[6], N-310[6]
18 Fr N-241[6], N-321[6], N-331[6]
24 Fr electives at '300' or '400' level (in consultation with Department)

42 BA Major in German

30 Germ N-241[6], N-354[6], N-452[6], N-453[6], N-455[6]
12 Germ N-451[6], N-456[3], N-457[3], N-457[3], N-458[3], N-459[3]
6* Ling N-221[6]; Phil N-211[6] or N-361[6]; Rel N-443[6]; Hist N-210[6]; Pol Sc N-351[6]; Geog N-423[6]; Lat N-210[6] or N-240[6]

**Optional, but recommended*

42 BA Major in Anthropology

6 Anth N-211[6]
6 Ling N-221[6]
Int St/Geog N-341[6]
Int St/Anth N-333[6]
Soc N-210[6]
6 Soc N-241[6], N-420[6], N-440[6], N-444[3], N-445[3], N-455[6], N-471[6]
6 Anth N-434[6]
6 Ant N-425[6], N-458[6], N-459[6], N-461[6]
6 Ant N-421[6], N-462[6], N-464[3], N-465[3], N-466[3], N-467[3], N-468[6]
6 Anth electives

42 BA Major in Applied Mathematics

30 Math N-241[6], N-261[6], N-270[6], N-281[6], N-290[3], N-311[3]
12 Math electives from N-291[3], N-312[3], N-331[6], N-351[3], N-366[3]

60 BA Major in Asian Studies

6 Int St N-495[6]
6 Hist N-261[6]
6 Pol Sc N-355[6]
6 Rel N-311[6], N-312[6], N-313[6]
6 Anth N-464[3], N-465[3], N-466[3], N-467[3]
18 Arabic N-411[6], Econ N-440[6]; Hist N-361[6], N-362[6], N-363[6], N-461[6]; Music N-343[3]; Pol Sc N-485[6]; Rel N-311[6], N-312[6], N-313[6]
12 Asian content electives (in consultation with Asian Studies Major Advisor)

60 BA Major in Applied Social Science

Year I
6 App Soc Sc N-212[6]
Year III
6 App Soc Sc N-400[6]
Year I, II & III
18 App Soc Sc N-351[3], N-413[6], N-431[6], N-451[3], N-452[3], N-441[3], N-421[3], N-471[6]
6 Psy N-271[6]
6 Soc: Area I
6 Soc: Area III
6 Soc: Area III or IV
6 Psy* N-422[6], N-428[6], N-438[6], N-442[6], N-452[6], N-454[6]

**NOTE: In certain years 'Slected Problems' sections in Psy may be substituted with the approval of the Departmental Chairman. Psy N-271 must be taken in Yr I by students having CEGEP Psy or at the latest in Yr II.*

45 BA Major in Canadian Politics

27 Pol Sc N-231[6], N-330[6], N-334[6], N-335[3], N-436[3], N-437[3]
12 Pol Sc electives in theory, comparative politics or international relations
6 Pol Sc or Cdn content elective (with approval by Department of Pol Sc)

42	BA Major in Psychology
6	Psy N-271[6], N-273[6]
6	Psy N-412[6]
6	Psy N-421[6], N-422[6], N-432[6], N-461[6]
24	Psy N-241[6] or 242[6], N-375[3], N-413[6], N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-471[6], N-481[6], N-482[6], N-491[3], N-492[3], N-493[3], N-493[3]

42	BA Major in Science and Human Affairs
12	Int St N-201[3], N-202[3], N-221[3], N-222[3]
6	Int St N-312[6], N-321[6], N-331[3], N-351[6] or Sc. electives approved by the Department
18	Int St N-401[6], N-446[6], N-447[6], N-472[6]; Phil N-221[6], N-376[3], N-443[6], N-421[6]; Soc N-422[6]; Hist N-333[6]; or electives approved by the Department
6	Int St N-493[6]

42	BA Major in Sociology
6	Soc 210[6] or if exempted, Soc elective (in consultation with Major Advisor)
6	Soc N-301[3], N-302[3]
6	Soc N-411[6], N-412[6], N-413[6]
6	Soc N-430[6], N-431[6]
18	Soc electives (in consultation with Major Advisor)

42	BA Major in Urban Studies
6	Econ N-209[3], N-210[3]
6	Geog N-211[6]
6	Pol Sc N-240[6], N-330[6]
6	Soc N-210[6]
3-6	Econ N-375[3] or Geog N-362[3] or Soc N-241[6]
3-6	Econ N-274[3], N-426[3]; Geog N-260[3], N-261[3], N-331[6]; Pol Sc N-320[6], N-334[6]; Soc N-411[6], N-441[3], N-448[3]
9*	Econ N-304[3], N-305[3], N-427[3], N-446[3]; Geog N-355[6], N-434[6], N-457[3]; Pol Sc N-333[6]; Soc N-440[3], N-450[6], N-456[6]; Int St N-491[6]

*(a) Not more than 6 credits may be taken in any one department.
(b) Substitutes may be made with permission of the coordinator.

42	BA Major in Religion
6	Rel N-211[6], N-213[6], N-311[6], N-312[6], N-313[6]
6	Rel N-301[3], N-302[3], N-326[3], N-327[3], N-328[3], N-329[3], N-330[3], N-361[6], N-362[6], N-363[6]
30	Rel electives at '300' or '400' level

42	BA Major in Social Psychology
6	Psy N-271[6], N-273[6]
12	Psy N-412[6] and Soc N-420[6] or Psy N-442[6] and Soc N-430[6]
6	Soc N-422[6], N-443[6], N-446[6]
6	Psy N-422[6], N-432[6], N-434[6]
6	Psy N-428[6]; Soc N-411[6]
6	Electives in Anth, Soc

42	BA Major in Spanish
6	Span N-221[6], N-222[6]
6	Span N-241[6]
6	Ling N-221[6]
24	Span N-412[6], N-451[6], N-452[6], N-453[6], N-454[6], N-455[6], N-456[6]

42	BA Major in Russian Studies
18	Russ N-210[6], N-241[6], N-311[6]
6	Hist N-341[6]
18	Russ N-351[6], N-452[6], N-453[6], N-454[3], N-455[3]; Hist N-342[6]; Pol Sc N-353[6]; Phil N-365[6]; Econ N-464[3], N-465[3]

60	BA Major in Social Welfare
6	Econ N-209[3], N-210[3]
6	Pol Sc N-320[6]
6	Psy N-211[6]
6	Soc N-210[6]
12	Soc electives
12	Econ or Pol Sc or Psy electives
6	App Soc Sc N-461[6]
6	Psy N-241[6] or Sec N-241[6]

45	BA Major in Statistics
24	Math N-241[6], N-261[6], N-281[6], N-290[3], N-341[3], N-343[3], N-351[3], N-352[6], N-372[3]
6	Math electives from N-312[3], N-342[3], N-353[3], N-441[3], N-442[3], N-451[3], N-452[3]

48 BA Major in History

Year I
6 Hist N-210[6]
6 Hist electives at '200' level

Year II
6 Hist electives
6 Hist electives at '300' or '400' level

Year III
6 Hist electives
6 Hist electives at '400' level
12 Electives in related disciplines or History (with approval of the Department)

48 BA Major in Judaic Studies

6 Rel N-201[6]
6 Rel N-211[6], N-213[6]
21 Rel N-301[3], N-325[3], N-326[3], N-327[3], N-328[3], N-329[3], N-330[3], N-401[3], N-497[3], N-498[3]
6 Rel N-361[6], N-362[6], N-313[6]
9 Electives in related disciplines at '300' or '400' level (in consultation with Major Ad-

42 BA Major in Philosophy

Year I
6 Phil N-210[6], N-211[6]
6 Phil N-221[6], N-231[6], N-273[6]

Year II
6 Phil N-301[6] or N-401[6] or N-403[6]
6 Phil electives at '300' or '400' level
6 Phil electives

Year III
6 *Phil N-369*[6], N-405[6], N-409[6]
6 Phil electives at '300' or '400' level

51 BA Major in Indo-European Linguistics

36 Ling N-221[6], N-421[6], N-431[6], N-441[6], N-490[6], N-491[6]
3-6 Engl N-318[3], or N-460[6] or Span N-412[6]
6 Gr N-241[6] or Gr electives at '400' level
6 Lat N-240[6] or N-341[6] or Lat electives at '400' level

42 BA Major in Mathematics

36 Math N-241[6], N-261[6], N-281[6], N-292[6], N-361[6], N-366[3], N-372[3]
6 Math electives from N-311[3], N-322[3], N-373[3], N-381[3], N-391[3].

48 BA Major Political Science

6 Pol Sc N-311[6], N-320[6]
18 Pol Sc N-240[6], N-270[6], N-330[6]
6 Pol Sc, Area I electives
6 Pol Sc, Area II electives
6 Pol Sc, Area III electives
6 Pol Sc, Area IV electives

48 BA Major in International Affairs

27 Pol Sc N-270[6], N-381[6], N-437[3], N-483[6], N-485[6]
21 Electives with relevant international content (with approval of Department)

48 BA Major in Music

6 Music N-235 or equivalent
12 Music N-321, N-341
30 Music electives chosen in consultation with the Department.

NOTE: A student granted exemption from Music N-235 will substitute another credit in Music chosen in consultation with the Department.

48 BA Major in Political Sociology

18 Soc N-210[6], N-301[3], N-302[3], N-337[6]
18 Pol Sc N-240[6], N-311[6], N-413[6]
6 Soc N-430[6], N-431[6], Pol Sc N-320[6], N-415[6]
6 Soc N-440[3] and N-441[3], N-443[6], N-446[6], N-455[6], N-471[6], Pol Sc N-333[6], N-334[6], N-335[3] and N-436[3], N-351[6], N-458[6]

30 Minor in Judaic Studies

6 Rel N-201[6]
18 Rel N-301[3], N-302[3], N-326[3], N-327[3], N-328[3], N-329[3], N-330[3]
6 Rel N-401[3], N-497[3], N-498[3] or electives at '400' level (in consultation with Major Advisor)

30 Minor in Latin

6 Class N-212[6], N-214[6].
24 Lat N-240[6], N-341[6], N-441[6], N-442[6].

30 Minor in Linguistics

24 Ling N-221[6], N-421[6], N-431[6], N-441[6]
6 Arabic N-411[6]; Ling N-490[6], N-491[6]; Engl N-460[6]; Fr N-312[6], N-313[3], N-417[6], N-418[3]; Span N-412[6]

30 Minor in Mathematics

24 Math N-241[6], N-261[6], N-271[3], N-281[6], N-291[3]
6 Math electives

30 Minor in Music

6 Music N-235[6], or equivalent
24 Music electives, including 12 credits at the '300' and '400' level, to be chosen in consultation with the Department.

NOTE: A student granted exemption from Music N-235[6] will substitute another 6 credits in Music chosen in consultation with the Department.

30 Minor in Philosophy

12 Phil N-210[6], N-211[6], N-221[6], N-321[6], N-369[6], N-405[6]
18 Phil N-301[6], N-321[6], N-369[6], N-396[3], N-401[3], N-403[6], N-405[6], N-407[6], N-421[6], N-431[6], N-493[6], N-495[6]

30 Minor in Philosophy of Education

30 Ed N-201[6], N-230[3], N-430[6], N-441[6], N-490[3], N-491[3], N-492[3], N-493[3]

30 Minor in Political Science

18 Pol Sc N-240[6], N-270[6], N-320[6], N-330[6]
12 Pol Sc electives

30 Minor in Psychology

6 Psy N-271[6]
24 Psy N-241[6] or N-242[6], N-412[6], N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-481[6], N-482[6]

**Six of these credits may be chosen from Psy N-302[6], N-303[3], N-304[3], N-305[3], N-402[3], N-403[3], N-404[3], N-405[3]*

30 Minor in Religion

30 Rel electives (in consultation with Departmental Advisor)

30 Minor in Russian

12 Russ N-241[6], N-311[6]
18 Russ N-351[6], N-452[6], N-453[6], N-454[3], N-455[3]

NOTE: For majors and honours in Russian Studies refer to § 41.11.5., Interdisciplinary Studies.

30 Minor in Science and Human Affairs

12 Int St N-201[3], N-202[3], N-221[3], N-222[3]
18 Int St N-312[6], N-351[6], N-401[6], N-446[6], N-447[6], N-472[6].

30 Minor in Sociology

6 Soc N-210[6] or, if exempted, Soc electives (in consultation with Major Advisor)
6 Soc N-301[3], N-302[3]
6 Soc N-411[6], N-412[6], N-413[6]
6 Soc N-430[6], N-431[6]
6 Soc electives (in consultation with Major Advisor)

30 Minor in Spanish

6 Span N-221[6], N-222[6]
6 Span N-241[6]
18 Span N-412[6], N-451[6], N-452[6], N-453[6], N-454[6], N-455[6], N-456[6]

30 Minor in Statistics

24 Math N-241[6], N-261[6], N-271[3], N-281[6], N-291[3]
6 Math electives

30 Minor in Anthropology

12 Anth N-211[6], N-434[6]
18* A. Anth N-425[6], N-458[6], N-459[6], N-461[6]
B. Anth N-421[6], N-462[6], N-464[3], N-465[3], N-466[3], N-467[3], N-468[6]

**At least 6 credits must be chosen in Both A & B*

30 Minor in Applied Mathematics

24 Math N-241[6], N-261[6], N-271[3], N-281[6], N-291[3]
6 Math electives

30 Minor in Art History

18 Art Hist N-342[6], N-343[6], N-444[6].
12 Art Hist N-341[6], N-345[6], N-441[6], N-442[3], N-443[6], N-445[6], N-446[6], N-448[3], N-449[3]

30 Minor in Cinema

12 Cinema N-211[6], N-212[6]
18 Credits in Cinema
or
12 Credits in Cinema and
6 Fr N-461[6]

Note: Students who received credit for Cinema 211[6] or Cinema 212 before September of 1971 must consider these courses as equivalent to Cinema N-311 and Cinema N-312 respectively for the purpose of fulfilling degree requirements.

30 Minor in Economics

6 Econ N-209[3] and N-210[3]
6 Econ N-311[6]
6 Econ N-318[6]
12 Econ Electives

30 Minor in Education

30 Ed N-201[6], N-210[6], N-230[3], N-311[6], N-390[3], N-392[3], N-415[3], N-416[3], N-417[3], N-421[6], N-430[6], N-441[6], N-451[6], N-497[3]

30 BA Minor in English

6 Engl N-231[3], N-232[3], N-281[6], N-282[6], N-283[6], N-287[6]
6 Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-460[6], N-466[6]
6 Engl N-374[6], N-375[6], N-376[6]
12 Engl electives at '300' and '400' level (excluding N-311)

30 Minor in French

6 Fr N-214[6], N-310[6]
12 Fr N-241[6], N-321[6], N-331[6]
12 Fr electives at '300' or '400' level

30 Minor in Geography

12 Geog N-211[6], N-271[6]
6 Geog N-260[3], N-261[3]
12 Geog electives

30 Minor in German

12 Germ N-241[6], N-311[6]
18 Germ N-354[6], N-451[6], N-452[6], N-453[6], N-455[6], N-456[3], N-457[3], N-458[3], N-459[3]

30 Minor in Greek

6 Class N-212[6], N-214[6].
24 Gr N-210[6], N-241[6], N-441[6], N-442[6].

30 Minor in Hebrew

24 Heb N-241[6], N-441[6], N-442[6], N-451[6]
6 Ling N-221[6]; Arabic N-411[6]

30 Minor in History

6 Hist N-210[6]
6 Hist N-221[6], N-251[6], N-261[6]
12 Hist electives at '300' level
6 Hist electives at '300' or '400' level

30 Minor in Italian

18 Ital N-221[6], N-241[6], N-452[6]
12 '400' level credits from Loyola Faculty of Arts and Science.

30 Minor in Journalism

30 Journ. N-201[6], N-205[3], N-301[6], N-305[3], N-401[6], N-405[3], N-410[3]

being applied to a "full-course" (normally two terms) and one half-credit being applied to a "half-course" (normally one term).

Starting in 1974-75, in accordance with the recommendations of the Quebec Council of Universities, the credit-base is being modified to take into account the total activity of the student. Students preparing for the degree of Bachelor of Education (English as a Second Language) will take a minimum of 90 credits. Each credit represents, for the average student, a minimum of 45 hours of work spread across lectures, conferences, laboratories, studio or practice-periods, tests, examinations and personal work.

Graduation with the degree of Bachelor of Education (English as a Second Language)

Elementary Option requires:

Successful completion, in an approved sequence, of the following:
TESL N-222[3], TESL N-231[3], TESL N-241[3], TESL N-311[3], TESL N-315, TESL N-351[3], TESL N-422[3], TESL N-431[3], TESL N-441[3], TESL N-480[3], TESL N-481[3].

9 credits selected from:
TESL N-317[3], TESL N-319[3], TESL N-321[3], TESL N-434[3], TESL N-442[3].

NOTE: Students with difficulties in articulation will be expected to take TESL N-201[3] in lieu of one of the TESL electives.

Education N-201[6], N-210[6], N-230[3], N-453[3] either English N-211[6] or N-311[6] Linguistics N-221[6].

6 additional credits in English, the selection to be approved by the Centre for English as a Second Language.

NOTE: Students whose mother tongue is English may, with the approval of the Centre, substitute French N-331[6].

12 credits from any department in the Sir George Williams Faculty of Arts.

Graduation with the degree of Bachelor of Education (English as a Second Language)

Secondary Option requires:

Successful completion, in an approved sequence, of the following:
TESL N-223[3], TESL N-231[3], TESL N-241[3], TESL N-312[3], TESL N-315[3], TESL N-351[3], TESL N-423[3], TESL N-431[3], TESL N—441[3], TESL N-480[3], TESL N-481[3].

9 credits selected from:
TESL N-317[3], TESL N-319[3], TESL N-321[3], TESL N-434[3], TESL N-442[3].

NOTE: Students with difficulties in articulation will be expected to take TESL N-201[3] in lieu of one of the TESL electives.

Education N-201[6], N-210[6], N-230[3], N-453* Either English N-211[6] or N-311[6] Linguistics N-221[6].

6 additional credits in English, the selection to be approved by the Centre for English as a Second Language.

NOTE: Students whose mother tongue is English may, with the approval of the Centre, substitute French N-331[6].

12 credits from any department in the Sir George Williams Faculty of Arts.

NOTE: Graduating students will be retested for language proficiency, English or French, whichever is their second tongue.

Opportunities for Advanced Study and Research

With the approval of the Centre, students with a potential for advanced work and research may, within their options, select the following courses:

Linguistics N-431[6]	Comparative Indo-European Linguistics
Linguistics N-441[6]	Advanced Linguistic Theory
TESL N-490[6]	Research Project

NOTE: Those possessing the degree of Bachelor of Education (English as a Second Language) Elementary or Secondary option will obtain a specialist teaching permit from the Quebec Ministry of Education.

41.10.2 CERTIFICAT D'ENSEIGNEMENT DE L'ANGLAIS, LANGUE SECONDE AU NIVEAU LÉMENTAIRE

(PROGRAMME INTENSIF DE PERFECTIONNEMENT)

The Centre for Teaching English as a Second Language offers a 30 credit programme leading to the Certificat d'enseignement de l'anglais, langue seconde au niveau élémentaire.

Successful candidates who are certified elementary school teachers will also obtain a specialist teaching permit from the Quebec Ministry of Education.

This programme is part of the Ministry of Education's emphasis on the improvement of second language teaching and is offered for a period of three years from 1973.

Admission Requirements

Applicants must apply to their school boards and be approved by the Ministry of Education. Successful candidates are granted a five-month sabbatical with full pay during which time they follow intensive courses at the University in the Day division. These five-month periods extend from September to January and February to June. Candidates in both terms return for additional courses during the summer session of the same year of study. Supervised internship takes place during the five-month training and for a further period after the students have returned to the school in which they are employed.

Other applicants may be considered for admission to the programme on the basis of their experience and additional criteria deemed appropriate by the Centre. However such students, while eligible for the certificate if they meet the demands of the programme, may not obtain a teaching permit from the Ministry of Education.

Courses

ESL N-203[6], ESL N-204[3], TESL N-222[3], TESL N-231[3], TESL N-311[3], TESL N-315[3], TESL N-422[3], TESL N-441[3], TESL N-479[3].

NOTE: Native speakers of English may, with the approval of the Centre, take a substitute course for ESL N-203[6].

41.10.3 CERTIFICATE IN THE TEACHING OF ENGLISH AS A SECOND LANGUAGE

Elementary Option
Secondary Option

The Centre for Teaching English as a Second Language (TESL) offers during the evening and during its special summer sessions a

30	Minor in Theatre Arts
12	Theatre Arts N-212[6], N-255[6].
18	Theatre Arts N-247[6], N-312[6], N-315[6], N-331[6], N-340[6], N-355[6], N-413[6], N-421[6], N-431[6], N-455[6].

30	Minor in Visual Arts
12	Art N-200[6], Design N-301[3], Drawing N-200[6], N-300[6], Painting N-200[6], N-300[6], Photography N-201[3], N-301[3].
12	Art History N-341[6], N-342[6], N-343[6], N-345[6], N-441[6], N-443[6], N-444[6], N-445[6], N-446[6].

30	Minor in Woman's Studies
6	Int St N-241[3], N-242[3]
6	Rel N-333[3], N-334[3]
6	Hist N-328[6]
6	Psy N-383[6]; Soc N-458[6]
6	Pol Sc N-321[6]

Substitutes may be made with permission of the Women's Studies' Advisor.

41.9 Certificate in Education

The Department of Education offers a 30 credit programme leading to the Concordia University Certificate in Education and certification from the Provincial Department of Education.

Admission Requirements

1. Evidence of full-time employment with a recognized educational institution in Quebec.
2. Possession of a Quebec Provisional Teaching Authorization.

Courses

Education N-201[6]
Education N-210[6]
either Education N-401[3], or Education N-402[3], or an equivalent course in teaching methodology.
Education N-453[3]
education N-471[6]

6 additional undergraduate credits in Education chosen in consultation with the Director of the Programme

Transfer

Students with a maximum of 15 credits from other recognized institutions may be allowed to transfer into the programme

NOTE:

1. The student must meet the minimum scholarity requirements set by the provincial government before being recommended for certification.
2. This programme is not open to teachers of vocational subjects.

41.10 Curriculum for the Degree of Bachelor of Education (English as a Second Language)

Elementary School Option
Secondary School Option

The Centre for the Teaching of English as a Second Language offers the Degree of Bachelor of Education (Teaching English as a Second Language).

Admission Requirements

General admission requirements are listed in § 13

Specific requirements are as follows:

1. Satisfactory completion of a two-year pre-university programme in a CEGEP or equivalent. Within the programme the students will be required to have successfully completed the equivalent of four semester courses in English.

NOTE: We recognize that at least two years' warning must be given before a new profile can be accepted, and that this new profile is to be approved by the Comité de liaison enseignement supérieur enseignement collégial. Thus in the interim candidates who have not taken the minimum number of English courses will be admitted exclusively on the results of their performance in the Sir George Williams English Language Diagnostic Test.

2. Owing to the specialized nature of this programme, no more than 30 pro tanto credits will normally be permitted, and the University reserves the right to determine which ones these should be.
3. Language competence: Non-English students will be required to have fluency in the target language. The Sir George Williams English Language Diagnostic Test will be administered to determine English language competence.

Anglophone students planning to teach in the French school system are expected to have reasonable fluency in French. A test for language competence in French will be administered.

41.10.1 DEGREE REQUIREMENTS

Definition of Credit

Up to and including the academic year 1973-74, degree programmes have been expressed in terms of courses, with one credit

41.11 The Centre for Interdisciplinary Studies

Associate Professor of Physics and Director of the Centre for Interdisciplinary Studies
DAVID CHARLTON
Professor
FRED KNELMAN
Associate Professor of History and Science and Human Affairs
WADE CHAMBERS
Associate Professor of Religion and Coordinator of Asian Studies
DAVID MILLER
Associate Professor of History and Coordinator of Canadian Studies
ROBIN BURNS
Associate Professor of History and Coordinator of Russian Studies
IRVING SMITH
Assistant Professors
GORDON CADENHEAD
HERBERT ODOM
Assistant Professor of English and Canadian Studies
PATRICIA MORLEY
Visiting Assistant Professor and Coordinator of Science and Human Affairs
GEORGE BINDON
Lecturer in Sociology and Coordinator of Women's Studies
VIVIENNE WALTERS

41.11.1 THE CENTRE FOR INTERDISCIPLINARY STUDIES

The Centre for Interdisciplinary Studies offers a variety of interdisciplinary programmes. Each programme allows a student to study in a number of disciplines and relate these to the study of a complex area or problem. The area programmes include Canada, Russia and Asia. The programmes that confront issues are Science and Human Affairs, Urban Studies, and Women's Studies. The Centre also offers an Undergraduate Scholars Programme which encourages promising students to develop an individual programme of study in consultation with a faculty advisor.

41.11.2 ASIAN STUDIES

As Canada strengthens her relationships with the nations of Asia, she will need young men and women who have been trained in Asian Studies to provide leadership in such fields as education, foreign service, banking, international law, overseas industry and business. The Asian Studies Programme seeks to meet this need by offering an interdisciplinary course of study involving the departments of Economics, Fine Arts, History, Geography, Political Science, Religion and Sociology-Anthropology.

Asian Studies Committee

DAVID MILLER, *Religion-Coordinator*
LALITA SINGH, *Political Science*
CHARLES BRANT, *Sociology-Anthropology*
PHILIP COHEN, *Fine Arts*
JOHN HILL, *History*
SHEILA McDONOUGH, *Religion*
SHREEKANT PALEKAR, *Economics*
MARTIN SINGER, *History*

Programme

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60 BA Major in Asian Studies

6 Int St N-495[6]
6 Hist N-261[6]
6 Pol Sc N-355[6]
6 Rel N-311[6], N-312[6], N-313[6]
6 Anth N-464[3], N-465[3], N-466[3], N-467[3]
18 Arabic N-411[6]; Econ N-440[6]; Hist N-361[6], N-362[6], N-363[6], N-461[6]; Music N-343[3]; Pol Sc N-485[6]; Rel N-311[6], N-312[6], N-313[6]
12 Asian content elective (in consultation with Asian St Major Advisor)

Courses in Asian Studies

Interdisciplinary Studies N-495[6]
Seminar in Asian Studies
Arabic N-411[6]
Literary Arabic
Music N-343[6]
Introduction to Non-Western Music
Religion N-311[6]
The Religions of India, Ceylon, Southeast Asia
Religion N-312[6]
The Religions of China and Japan
Religion N-313[6]
Islam
Economics N-440[6]
Economic Development
History N-362[6]
Modern China
History N-361[6]
History of Modern India
History N-261[6]
History of Asia
History N-363[6]
Traditional China

SIR GEORGE WILLIAMS FACULTY OF ARTS

41.10.3

CERTIFICATE IN THE TEACHING OF ENGLISH AS A SECOND LANGUAGE

thirty-credit programme leading to a Certificate in the Teaching of English as a Second Language.

Admission Requirements

1. In order to qualify for admission, students must possess an appropriate teacher's certificate.
   Others may be admitted on the basis of their experience and other criteria suited to the demands of the programme.
2. Language competence
   (i) Francophone students will be required to have reasonable fluency in the target language. The Sir George Williams English Language Diagnostic Test will be administered to determine English language competence.
   (ii) Anglophone students planning to teach in the French school system are expected to have reasonable fluency in French. A test for language competence in French will be administered.

Courses

Elementary School Option:
TESL N-222[3], TESL N-231[3], TESL N-241[3], TESL N-315[3], TESL N-422[3], TESL N-441[3].
English N-211[6] or English N-311[6]
6 credits in English literature approved by the Centre for English as a Second Language.

Secondary School Option:
TESL N-223[3], TESL N-231[3], TESL N-241[3], TESL N-315[3], TESL N-423[3], TESL N-441[3].
English N-211[6] or English N-311[6]
(To be determined by the Centre on the basis of the student's language competence).
6 credits in English literature approved by the Centre for English as a Second Language.

Supervised practice in the teaching of English as a second language and conferences with an advisor from the Centre may be conducted. Students are expected to demonstrate positive evidence of teaching competence and professional behaviour.

NOTE: The Centre may, at its discretion, grant up to 12 credits for equivalent courses.

41.11.4 SCIENCE AND HUMAN AFFAIRS

Offering one of the first programmes of its kind in North America, the Department is concerned with the social dimensions of science and technology. Its teaching and research provide an interdisciplinary examination of the cultural and environmental problems associated with scientific and technological change. Attention is also focused on theoretical analysis of the internal social systems of science from historical, sociological and philosophical perspectives.

Science and Human Affairs Committee
DAVID WADE CHAMBERS, *History*
ROGER ANGEL, *Philosophy*
GEORGE BINDON, *Interdisciplinary Studies*
GORDON CADENHEAD, *Interdisciplinary Studies*
FREDERICK KNELMAN, *Interdisciplinary Studies*
HUGH McQUEEN, *Engineering*
ELAINE NEWMAN, *Biology*

Programmes

Students are responsible for satisfying their particular degree requirements, hence the following sequences must be read in conjunction with § 41.3

42	BA Major in Science and Human Affairs
12	Int St N-201[3], N-202[3], N-221[3], N-222[3]
6	Int St N-312[6], N-321[6], N-331[3], N-351[6] or Sc electives approved by the Department
18	Int St N-401[6], N-446[6], N-447[6], N-472[6]; Phil N-221[6], N-376[3], N-443[6], N-421[6]; Rel N-241; Soc N-422[6]; Hist N-333[6]; or electives approved by the Department
6	Int St N-493[6]

30	Minor in Science and Human Affairs
12	Int St N-201[3], N-202[3], N-221[3], N-222[3]
18	Int St N-312[6], N-351[6], N-401[6], N-446[6], N-447[6], N-472[6]

Courses in Science and Human Affairs

Interdisciplinary Studies N-201[3]
Introduction to Science and Human Affairs I

Interdisciplinary Studies N-202[3]
Introduction to Science and Human Affairs II

Interdisciplinary Studies N-211[3]
Environmental Issues I

Interdisciplinary Studies N-222[3]
Environmental Issues II

Interdisciplinary Studies N-312[6]
Case Histories in Experimental Science

Interdisciplinary Studies N-321[4] Geography, Early Man Anthropology

Interdisciplinary Studies N-333[6]
Introduction to Archaeology

Interdisciplinary Studies N-351[6]
Astronomy, Cosmology and the Space Age

Interdisciplinary Studies N-401[6]
Advanced Study in Technology in Society

Interdisciplinary Studies/History N-446[6]
Advanced Study in the History of Science

Interdisciplinary Studies/History N-447[6]
Advanced Study in the History of Science

Interdisciplinary Studies/Political Science N-472[6]
Science and Public Policy

Philosophy N-221[6]
Introduction to Logic and Philosophy of Science

Philosophy N-376[3]
Philosophy of the Social Sciences

Philosophy N-421[6]
The Philosophy of Science

Religion N-443[6]
Modern Religions and Atheistic Thought

History N-333[6]
Enlightenment and Revolution, 1640-1848

Sociology N-422[6]
Sociology of Knowledge

41.11.5 RUSSIAN STUDIES

The Russian Studies Major prepares students for professional and academic careers in Civil Service, Trade and Commerce, External Affairs and other areas of relationship between Canada and the Soviet Union. A wide variety of courses in Russian language, politics, economics, history, philosophy and geography is taught by specialists who work closely with students in designing programmes which best fit their needs.

Russian Studies Committee
IRVING SMITH, *History-Coordinator*
TITANIA SIDOROW, *Russian Language*
VLADIMIR ZEMAN, *Philosophy*

Programmes

Students are responsible for satisfying their particular degree requirements, hence the following sequences must be read in conjunction with § 41.3

60	BA Honours in Russian Studies
6	Econ N-209[3], N-210[3], N-221[6]
6	Econ N-465[3], N-464[3]
18	Russ N-210[6], N-241[6], N-311[6]
12	Hist N-341[6], N-445[6]
6	Geog N-343[6]
12	Russ N-351[6], N-452[6], N-453[6], N-454[3], N-455[3]; Phil N-365[3]; Pol Sc N-353[6]

42	BA Major in Russian Studies
18	Russ N-210[6], N-241[6], N-311[6]
6	Hist N-341[6]
6	Geog N-343[6]
12	Russ N-351[6], N-452[6], N-453[6],
18	Russ N-351[6], N-452[6], N-453[6], N-454[3], N-455[3]; Hist N-342[6]: Pol Sc N-353[6]; Phil N-365[6]; Econ N-464[3], N-465[3]

History N-461[6]
Advanced Study in Asian and African History
Political Science N-355[6]
The Politics of Developing Areas
Political Science N-485[6]
Diplomacy and Foreign Policy
Anthopology N-464[3]
Peoples and Cultures of India
Anthropology N-465[3]
Chinese Culture and Society
Anthropology N-466[3]
Peoples and Culture of Japan and Korea
Anthropology N-467[3]
Peoples and Culture of South East Asia.

41.11.3 CANADIAN STUDIES

The Canadian Studies Programme is designed to introduce the student to a number of disciplines as they apply to Canada. It provides the opportunity to obtain a liberal arts education given direction and depth by a focus on Canada. After completing the introductory core of courses, the student develops a proposal for an interdisciplinary research project and then in consultation with the Coordinator plans a programme of studies relevant to it. The research project is completed under the supervision of an advisor and is formally reported in the Canadian Studies Seminar.

Canadian Studies Committee
ROBIN BURNS, *History — Coordinator*
HARRY CLINCH, *Education*
PATRICIA MORLEY, *English*
JOHN MOSS, *English*
SANDRA PAIKOWSKY, *Fine Arts*
ANTHONY SYNNOTT, *Sociology*
RICHARD WILBUR, *History*

Programme

Students are responsible for satisfying their particular degree requirements, hence the following sequence must be read in conjunction with § 41.3

48 BA Major in Canadian Studies

6	Int St N-211[6]
6	Engl N-244
6	Fr N-211[6]
6	Hist N-211[6]
6	Int St N-411[6]
18*	Engl N-344[6], N-448[3]; Art N-249[6], N-444[6]; Music N-345[3]; Fr N-331[6], N-431[6], N-432[6], N-465[3]; Geog N-341[6]; Rel N-363[6]; Econ N-434[6], N-446[3]; Ed N-442[3]; Hist N-321[6], N-322[6], N-323[6], N-326[6], N-421[6]; Pol Sc N-330[6], N-335[3], N-436[3], N-437[3]; Soc N-445[3], N-470[3], N-471[6]; Anth N-462[6].

**More than 18 credits may be chosen*

Courses in Canadian Studies

Interdisciplinary Studies N-211[6]
Introduction to Canadian Studies
Interdisciplinary Studies N-411[6]
Seminar in Canadian Studies
English N-244[6]
Modern Canadian Literature
English N-344[6]
Modern Canadian Literature
English N-448[3]
Special Studies in Canadian Literature
Art History N-249[6]
Canadian Sculpture and Architecture
Art History N-444[6]
The Arts in Canada
Music N-345[6]
Folk Music of the Americas
French N-211[6]
Langue II et composition élémentaire
French N-331[6]
Littérature et culture québecoises
French N-431[6]
Le Roman québecois contemporain
French N-432[6]
La poésie québecoise contemporaine
French N-465[6]
Théâtre québecois
Religion N-363[6]
Religion in Canada
Economics N-434[6]
Economic History of Canada
Economics N-446[3]
The Economical Development of Quebec
Education N-442[3]
Education in Canada
Geography N-341[6]
Regional Geography of Canada
History N-211[6]
History of Canada
History N-321[6]
British North America: 1760-1873
History N-322[6]
Modern Canada: 1840 to the Present
History N-323[6]
French Canada to 1763
History N-325[6]
French Canada: 1763-1867
History N-326[6]
Quebec: 1867 to the present
History N-421[6]
Advanced Study in Canadian History
Political Science N-330[6]
Government and Politics of Canada
Political Science N-335[3]
Quebec Politics
Political Science N-436[3]
Canadian Federalism
Political Science N-437[3]
Canadian External Affairs
Sociology N-445[3]
Intergroup Relations in Canada
Sociology N-470[3]
Canadian Social Structure
Sociology N-471[6]
Quebec Society
Anthropology N-462[6]
Native Societies and Cultures of North America

Economics N-426[3]
Urban Economics

Economics N-427[3]
Regional Economics

Economics N-446[3]
The Economical Development of Quebec

Geography N-211[6]
Introduction to Human Geography

Geography N-260[3]
Introduction to Cartography I

Geography N-261[3]
Introduction to Cartography II

Geography N-331[6]
Urban Geography

Geography N-355[6]
Spatial Organization

Geography N-362[3]
Quantitative Geography I

Geography N-434[6]
Applied Urban Geography

Geography N-457[3]
Geography of Transportation

Political Science N-240[6]
Comparative Politics

Political Science N-320[6]
Problems and Concepts in Political Theory

Political Science N-330[6]
Goverment and Politics of Canada

Political Science N-333[6]
Problems of Public Administration

Political Science N-334[6]
Urban Politics

Sociology N-210[6]
Introduction to Sociology

Sociology N-241[6]
Statistics

Sociology N-411[6]
Research Techniques

Sociology N-440[3]
Community Studies

Sociology N-441[3]
Sociology of Urban Regions

Sociology N-448[3]
Population and Society

Sociology N-450[6]
Seminar in Urban and Metropolitan Studies

Sociology N-454[6]
Industry and Society

41.11.7 WOMEN'S STUDIES

This programme is designed to present a comprehensive view of women in society and to stimulate an interest in the study of women.

Women's Studies Committee
VIVIENNE WALTERS,
Sociology - Coordinator
CHRISTINE GARSIDE, *Philosophy*
SHEILA McDONOUGH, *Religion*
DOLORES GOLD, *Psychology*

Programme

Students are responsible for satisfying their particular degree requirements, hence the following sequence *must* be read in conjunction with § 41.3

30 Minor in Women's Studies

6 Int St N-241[3], N-242[3]
6 Rel N-333[3], N-334[3]
6 Hist N-328[6]
6 Psy N-383[6]; Soc N-458[6]
6 Pol Sc N-321[6]

Substitutes may be made with permission of the Women's Studies' Advisor.

Courses in Women's Studies

Interdisciplinary Studies N-241[3]
Nature of Woman: Historic Attitudes

Interdisciplinary Studies N-242[3]
Nature of Woman: Recent Approaches

Religion N-333[3]
Women and Religion I

Religion N-334[3]
Women and Religion II

History N-328[6]
Women in Western History

Political Science N-321[6]
Women and the Law

Psychology N-383[6]
Sexual Differentiation

Sociology N-458[6]
The Sociology of Sex Roles

41.11.8 UNDERGRADUATE SCHOLARS PROGRAMME

The Undergraduate Scholars Programme of the Sir George Williams Faculty of Arts permits a restricted number of responsible students of high academic ability to pursue individually tailored programmes of study leadint to the Bachelor of Arts degree with a major or honours in an area of specialization. The programme is planned through consultation between the scholar and his faculty advisor. As many as 54 of the 90 credits required for the degree may be comprised of tutorials. Such tutorials might take the form of guided independent study, or independent field or laboratory research; their precise nature will depend upon the scholar's educational goals, interests and area of specialization.

A student who wishes to apply for admission to the Undergraduate Scholars Programme should submit a written statement of his educational goals and arrange to have his collegial transcript and two letters of recommendation forwarded to:
David Charlton, Director of the Centre for Interdisciplinary Studies, Sir George Williams Faculty of Arts, Concordia University, by March 1st.

Courses in Russian Studies

Russian N-210[6]
Introductory Course in Russian

Russian N-311[6]
Advanced Russian Language and Stylistics

Russian N-241[6]
Intermediate Russian

Russian N-351[6]
Introduction to 19th Century Russian Literature through the Short Story

Russian N-452[6]
Soviet Literature

Russian N-453[6]
Russian Drama

Russian N-454[3]
Study of an Individual Russian Author I

Russian N-455[3]
Study of an Individual Russian Author II

Philosophy N-365[6]
Studies in Russian Philosophy

Economics N-209[3]
Introduction to Micro-economics

Economics N-210[3]
Introduction to Macro-economics

Economics N-221[6]
Introduction to Economic History

Economics N-464[3]
Marxian Economics

Economics N-465[3]
Soviet Economics

History N-341[6]
History of Russia

History N-445[6]
Advanced Study in Russian and Soviet History

Political Science N-353[6]
Soviet and East European Politics

41.11.6 URBAN STUDIES

The Urban Studies Programme introduces the student, through such disciplines as economics, sociology, geography and political science to the many areas of research and theory relevant to the modern city and its problems. It also provides the necessary background for later post-graduate specialization in some aspect of urban research, planning or administration.

Urban Studies Committee

J. BRESLAW, *Economics*
R. W. G. BRYANT, *Geography*
T. BUCKNER, *Sociology Co-ordinator*
J. FIKSEL, *Mathematics*
J. JACKSON, *Sociology*
R. KEATON, *Political Science*
A. RUSSEL, *Civil Engineering*
B. SLACK, *Geography*
Z. A. ZIELINSKI, *Engineering*

Programmes

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

72 BA Honours in Urban Studies

6	Econ N-209[3], N-210[3]
3	Econ N-426
12	Geog N-211[6], N-331[6]
6	Int St N-491[6]
6	Pol Sc N-240[6], N-330[6]
6	Pol Sc N-334[6]
15	Soc N-210[6], N-411[6], N-448[3]
3-6	Econ N-375[3] or Geog N-362[3] or Soc N-241[6]
3-6	Econ N-274[3], N-375[3]; Geog N-260[3], N-261[3]; Pol Sc N-320[6]; Soc N-441[3]
9*	Econ N-304[3], N-305[3]; N-427[3], N-446[3]; Geog N-355[6], N-434[6], N-457[3]; Pol Sc N-333[6]; Soc N-440[3], N-450[6], N-449[3], N-454[6]

**(a) Not more than 15 credits may be taken in any one department.*
(b) Substitutes may be made with permission of the Coordinator.

42 BA Major in Urban Studies

6	Econ N-209[3], N-210[3]
6	Geog N-211[6]
6	Pol Sc N-240[6], N-330[6]
6	Soc N-210[6]
3-6	Econ N-375[3] or Geog N-362[3] or Soc N-241[6]
3-6	Econ N-274[3], N-426[3]; Geog N-260[3], N-261[3], N-331[6]; Pol Sc N-320[6], N-334[6]; Soc N-411[6], N-441[3], N-448[3]
9*	Econ N-304[3], N-305[3], N-427[3], N-446[3]; Geog N-355[6], N-434[6], N-457[3]; Pol Sc N-333[6]; Soc N-440[3], N-450[6], N-454[6]; Int St N-491[6]

**(a) Not more than 6 credits may be taken in any one department.*
(b) Substitutes may be made with permission of the Coordinator.

Courses in Urban Studies

Interdisciplinary Studies N-491[6]
Seminar in Urban Studies

Economics N-209[3]
Introduction to Micro-economics

Economics N-210[6]
Introduction to Macro-economics

Economics N-274[3]
The Use of Economic Data

Economics N-304[3]
Canadian Economic Policy I

Economics N-305[3]
Canadian Economics Policy II

Economics N-375[3]
Introduction to Statistics for Economists

Studies N-446 for credits will register under Interdisciplinary Studies N-447. Students who have credits for Humanities of Science N-446 or History N-446 may not take this course for credits.

INTERDISCIPLINARY STUDIES/HISTORY N-447 (447)
Advanced Study in the History of Science

Prerequisite: Permission of the Coordinator. A student repeating Interdisciplinary Studies N-446 for a second time registers for credits under Interdisciplinary Studies N-447. (6 credits)
NOTE A/See § 200.1

INTERDISCIPLINARY STUDIES/POLITICAL SCIENCE N-472 (472)
Science and Public Policy

Prerequisites: Interdisciplinary Studies N-201, N-202, one course in Political Science or permission of the Coordinator or the Department. The relationship between science and government. Particular emphasis is placed on such problems as the role of the scientist in political decision-making, the making of Canadian science policy, the mix of basic, applied and mission-oriented research, the relations of science and the military, the nature of technocracy and the role of science in economically developing nations. (6 credits)

INTERDISCIPLINARY STUDIES N-491 (491)
Seminar in Urban Studies

Prerequisite: Third year standing in the Urban Studies Programme. Seminar for second and third year students in the Urban Studies programme. Each student must prepare and submit an appropriate research paper. (6 credits)
NOTE: With the permission of the Coordinator a student may take this course twice for credits provided that a different subject is dealt with the second time. He will register the second time under Interdisciplinary Studies N-492.

INTERDISCIPLINARY STUDIES N-492 (492)
Seminar in Urban Studies

Prerequisite: Permission of the Coordinator. A student repeating Interdisciplinary Studies N-491 for credits will register under Interdisciplinary Studies N-492. (6 credits)

INTERDISCIPLINARY STUDIES N-493 (493)
Seminar in Science and Human Affairs

Prerequisite: Second year standing in Science and Human Affairs Major. A seminar for second and third year students in Science and Human Affairs which affords an opportunity for intensive examination of an explicitly interdisciplinary theme. (6 credits)
NOTE: With permission of the Coordinator a student may take this course twice for credits, provided that a different subject is dealt with the second time. A student repeating Interdisciplinary Studies N-493 for credits will register under Interdisciplinary Studies N-494.

INTERDISCIPLINARY STUDIES N-494
Seminar in Science and Human Affairs

Prerequisite: Permission of the Coordinator. A student repeating Interdisciplinary Studies N-492 for credits will register under Interdisciplinary Studies N-494 (6 credits)

INTERDISCIPLINARY STUDIES N-495 (495)
Seminar in Asian Studies

Prerequisite: Permission of the Coordinator. A seminar designed for majors in Asian Studies. The seminar will vary in content depending upon the interests of the majors taking the course. (6 credits)
NOTE: With the premission of the Coordinator, a student may take this course twice for credits, provided that a different subject is dealt with the second. He will register the second time under Interdisciplinary Studies N-496. NOTE A/See § 200.1

These courses were given in the summer of 1974.
ASIAN STUDIES N-201/1 A
Introduction to Civilizations and Cultures of India
INTERDISCIPLINARY STUDIES N-211/1 Political Economy of Women's Work*

41.11.9 COURSE DESCRIPTIONS

NOTE: 1. These courses were previously listed under the titles of Archaeology, Asian Studies, Canadian Studies, Humanities, Humanities of Science, Russian Studies and Urban Studies. 2. Courses in Interdisciplinary Studies may be regarded as courses in Humanities or in Social Sciences

INTERDISCIPLINARY STUDIES N-201 (201)
Introduction to Science and Human Affairs I

The social and historical context of scientific and technological change. The reciprocal interactions of science with government, ideology, economic development, religion, literature and social theory; science and the city; science and the control of human life; science and human liberation; new definitions of scientific responsibility may be considered. (3 credits) *NOTE A/See* § 200.1

INTERDISCIPLINARY STUDIES N-202 (202)
Introduction to Science and Human Affairs II

A continuation of Interdisciplinary Studies N-201. This course may be taken independently. (3 credits) *NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES N-211
Introduction to Canadian Studies

Prerequisite: First year standing Canadian Studies Major, or permission of the Coordinator. An introduction to some of the problems which have been explored by the humanities and social sciences in the study of Canada. The themes will vary from year to year and would cover topics such as the industrialisation of Quebec, immigrant and ethnic traditions and the Americanisation of Canada. (6 credits)

INTERDISCIPLINARY STUDIES N-221 (221)
Environmental Issues I

The scientific, social and cultural nature of man's relationship to his environment. Emphasis will be placed on pollution, conservation, Population resources and human ecology. (3 credits) *NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES N-222 (222)
Environmental Issues II

A continuation of Interdisciplinary Studies N-221. This course may be taken independently. (3 credits) *NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES N-241 (241)
Nature of Woman: Historic Attitudes

An interdisciplinary study of the nature of woman as understood by western society from its Greek origins to the mid-nineteenth century. Sample topics are: the Greek myths, the Bible (Eve and Mary), Greek philosophy (Plato and Aristotle), courtly love, medieval mysticism and Victorianism (Kierkegaard, Schopenhauer, Queen Victoria and Ibsen. (3 credits)*NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES N-242 (242)
Nature of Woman: Recent Approaches

An interdisciplinary study of the nature of woman as understood by western society from the mid-nineteenth century to the present. Sample topics are: the effect of the Industrial Revolution on the family (Marx and Engels), the emancipation of women (John Stuart Mill, Virginia Woolf), the psychology of woman (Freud and Jung), and contemporary attitudes towards women and Women's Liberation. (3 credits) *NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES N-300
Faculty of Arts Lecture Series

This course provides a flexible context for study in a field of immediate or specific interest. The theme or topic discussed will vary from year to year. (3 credits)

INTERDISCIPLINARY STUDIES N-312 (212)
Case Histories in Experimental Science

Readings will concentrate on the original scientific texts (e.g. Harvey, Galileo, Newton, Faraday, Pasteur, Crick and Watson). In the laboratory section, students will follow the original experimental procedures which will also be examined in classroom demonstrations on film and on videotape. (6 credits) *NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES/ GEOGRAPHY N-321 (448)
Early Man

An examination of the scientific evidence for the unwritten part of man's evolutionary history. The course will study both food-gathering man and food-producing man. The roles of the biological and cultural components will also be considered. (6 credits)

INTERDISCIPLINARY STUDIES/ ANTHROPOLOGY N-333 (333)
Introduction to Archaeology

An introduction to the archaeology of the ancient civilizations of the Mediterranean world. Special emphasis will be given to the methodological approach to archaeology. (6 credits)
NOTE A/See § 200.1

INTERDISCIPLINARY STUDIES N-351 (451)
Astronomy, Cosmology and the Space Age

The nature of the universe as described in both contemporary and historical astronomical theories; cosmology and its cultural context; the nature of scientific method in astronomy; life on other worlds; the social implications of space flight. (6 credits)
NOTE A/See § 200.1

INTERDISCIPLINARY STUDIES N-401 (471)
Advanced Study in Technology and Society

Prerequisite: Interdisciplinary Studies N-201, 202, or permission of the Coordinator. The social role and impact of technology in modern society; alienation in the technological age; the critique of technology; the sources and processes of discovery; invention and innovation; methods of technological assessment and forecasting. (6 credits) *NOTE A/See § 200.1*

INTERDISCIPLINARY STUDIES N-411 (411)
Seminar in Canadian Studies

Prerequisite: Registration in the second year of the major in Canadian Studies. This is a seminar course in Canadian Studies which involves participation by interested members of the staff as well as by students in the third year of the major in Canadian Studies. (6 credits)
NOTE: With the permission of the Coordinator, a student may take this course twice for credits, provided that a different subject is dealt with the second time. A student repeating Interdisciplinary Studies N-411 for credits will register under Interdisciplinary Studies N-412.

INTERDISCIPLINARY STUDIES N-412 (412)
Seminar in Canadian Studies

Prerequisite: Registration in second year of the major in Canadian Studies. A student repeating Interdisciplinary Studies N-411 for a second time registers for credits under Interdisciplinary. Studies N-412. (6 credits)
NOTE A/See § 200.1

INTERDISCIPLINARY STUDIES/HISTORY N-446 (446)
Advanced Study in the History of Science

Prerequisite: Permission of the Coordinator. Seminar in a selected topic in the History of Science. The emphasis will be on encouraging students to conduct historical investigation on their own under a professor's guidance. The specific content will vary from year to year depending on the instructor. (6 credits)
NOTE: With permission of the Coordinator, a student may take this course twice for credits provided that a different subject is dealt with the second time. A student repeating Interdisciplinary

the student with language laboratory operation, the tape recorder, projectors and other equipment. Students will be required to develop materials consistent with their classromm needs, such as tapes, transparencies, slides, films, etc. This course is intended for those registered in the Secondary Option. (3 credits).

TESL N-315
Testing and Evaluation

Prerequisite: TESL N-222 or N-223. An introduction to the general purposes and methods of language testing with a description of the chief characteristics of sound educational measures. The course examines the processes involved in constructing and administering ESL tests designed to evaluate proficiency in the four major skills: listening, speaking, reading and writing. (3 credits).

TESL N-317
Teaching Composition to the ESL Student

Prerequisite: Second Year Standing. This course examines the skill of writing in second language teaching. Areas of concentration will include graphology, mechanics, syntax, topic sentences, and units of discourse larger than the sentence: — paragraphs and compositions. Procedures and techniques for teaching and testing the various levels of writing are presented. The course is particularly relevant for the Secondary School teacher. (3 credits).

TESL N-319
Development of Effective Reading Skills

Prerequisite: Second year standing. This course is concerned with the abilities required by the ESL student for decoding written material. The developmental stages in the reading process are explored, the techniques for vocabulary expansion are studied, and the essential features of material required for the various stages of reading competence are considered. The course is particularly relevant for the Secondary School teacher. (3 credits).

TESL N-321
Comparative Stylistics

This course examines the stylistic resources of English in relation to those of French. Points of similarity and difference in cultural context and in phonology, morphology, syntax and vocabulary are studied. Practical work is conducted in analysis of translations from French to English. (3 credits).

TESL N-351
History and Development of the English Language

A study of the morphological, phonological, syntactical and semantic changes that have taken place from Proto-Indo-European to the present. Students are required to do elementary linguistic analyses of texts from different stages in the development of the language. (3 credits).

TESL N-422
Advanced Methodology — Elementary

Prerequisite: TESL N-222. In this course students are taught the criteria for assessment of materials and methods. Using these criteria they will be expected to prepare drills, exercises and dialogues and to produce complete lesson plans appropriate to the Elementary School level. Curriculum evaluation and curriculum planning will be an integral part of the course. (3 credits).

TESL N-423
Advanced Methodology — Secondary

Prerequisite: TESL N-223. In this course students are taught the criteria for assessment of materials and methods. Using these criteria they will be expected to prepare drills, exercises and dialogues and to produce complete lesson plans appropriate to the Secondary School level. Curriculum evaluation and curriculum planning will be an integral part of the course. (3 credits).

TESL N-431
Grammatical Theory

Prerequisite: TESL N-231. In this course the grammatical forms and structures of English which create difficulties for the ESL student are isolated and analyzed in detail with particular emphasis given to verb structures. A survey of various theories of grammar and their influence on the preparation of language teaching materials is also presented. In addition ESL textbooks presently being used in the Province of Quebec are examined in terms of the effectiveness of presentation of grammatical and syntactic structures. (3 credits).

TESL N-434
Error Analysis

Prerequisite: Second year standing. A study of errors made by the ESL learner. This course considers recurring types of intralingual and developmental errors in language use. Teaching procedures will take such developmental and structural conflicts into consideration. (3 credits).

TESL N-441
Comparative Phonetics

A study of the phonetic and phonemic features of English and the methodology of corrective phonetic practice for the non-native speaker. A comparison of the phonological systems of English and French will be emphasized, but points of conflict between English and certain other languages, and methods of reducing interference, will also be discussed. (3 credits).

TESL N-442
Problems in Bilingualism

An examination of the social and psychological background of languages in contact, with particular emphasis on the situation in Quebec. Motivation for second language learning in schools is studied in terms of cultural and socio-economic factors. In addition such extra-linguistic influences as the historic and political context of bilingualism in Canada are covered. (3 credits).

TESL N-479
Internship

This course is offered only to students enrolled in the programme *Certificate d'enseignement de l'anglais, langue seconde au niveau élémentaire*. Il will involve observation and supervised teaching practice both in the university and in the schools. The course will also include seminar sessions for analysis and discussion of teaching performance. (3 credits).

TESL N-480
Internship

This internship will be closely integrated with the TESL courses. It will provide for a practical application of the theories and points of view advanced and discussed in the classes. It will involve observation, micro-teaching and supervised teaching practice. The course will also include preparation for, and attendance at, scheduled seminar sessions and tutorials for analysis and discussion of teaching performance. (3 credits).

TESL N-481
Internship

Prerequisite: TESL N-479 or TESL N-480. This course will include the same components as TESL N-480, but performance at a more advanced level will be expected. (3 credits).

TESL N-490
Research Project

This will include research related to some problem area of second language teaching. (6 credits).

41.12 Centre for the Teaching of English as a Second Language

Associate Professor and Director of the Centre
WILLIAM B. CURRIE

Associate Professors
ANNE M. STOKES
RICHARD C. YORKEY

Assistant Professors
PALMER ACHESON
JOE DARWIN PALMER
BRIAN MICHAEL SMITH
VIRGINIA D. WRIGHT

Administrator of Internship and Director, English as a Second Language
GWEN S. NENSHAM

Lecturer
B. MARY PETRIE

Sessional Instructors
ELYSE ENGEL
ROSALYN FREEDMAN

41.12.1 COURSE DESCRIPTIONS

ESL N-201 (201)
English Language and Composition

Prerequisite: Successful completion of ESL-100 or proven equivalent competence in English. This course is designed for non-English students who have completed secondary school or its equivalent in a language other than English. The course encourages the development of effective written communication and improved reading comprehension so that the student may perform competently in his other university work. (6 credits).

ESL N-203
Effective Communication 1

This course is offered only to students enrolled in the programme. *Certificat d'enseignement de l'anglais, langue seconde au niveau élémentaire (programme intensif de perfectionnement).* The aim of the course is to develop a high degree of proficiency in both oral communication, and aural and reading comprehension. (6 credits).

ESL N-204
Effective Communication II

This course is offered only to students enrolled in the programme. *Certificat d'enseignement de l'anglais, langue seconde au niveau élémentaire (programme intensif de perfectionnement).* The aim of the course is to encourage the development of clear effective writing. Aspects of styles such as appropriate levels of usage, choice of diction, and tone will be studied. (3 credits).

TESL N-201
Speech

This is an introductory course for those who have difficulty with the English sound system. It is a practical application of the knowledge of the sound, stress, intonation and rhythm patterns of English in effective oral communication. (3 credits).

TESL N-222
Introductory Methodology — Elementary

This course will prepare the student to use effectively the textbooks prescribed for the Elementary School level, and to adapt them to the objectives outlined by the Ministry of Education. The principles of selection and sequencing, and the techniques of presentation appropriate to the Elementary School child will be studied. (3 credits).

TESL N-223
Introductory Methodology — Secondary

This course will prepare the student effectively to use the textbooks prescribed for the Secondary School level, and to adapt them to the objectives outlined by the Ministry of Education. The principles of selection and sequencing, and the techniques of presentation appropriate to the Secondary School student will be studied. (3 credits).

TESL N-231
Modern English Grammar

This course provides an intensive review of English grammar. All the elements of morphology and syntax are presented in a systematic, practical way in order to provide the essential background for a more profound analysis of English linguistic structures. Grammar exercise and analysis of the complexities of syntax form an integral part of the course. (3 credits)

TESL N-241
Language Acquisition

This course analyzes the developmental processes in native language acquisition. The psycho-linguistic factors involved in the child's conversion of language input into linguistic performance and their implication for second language learning are studied. Controlled presentation of material designed to promote competence in a second language is emphasized. (3 credits).

TESL N-311
Audio-Visual Aids in Second Language Teaching

Prerequisite: TESL N-222. This course examines audio-visual resources and their effective use in second language teaching. It familiarizes the student with language laboratory operation, the tape recorder, projectors and other equipment. The effectiveness of simple teaching aids such as flannel and magnetic boards, cue cards, stick figures, and picture cut-outs is studied with particular regard for the needs of the elementary school child. Students will be required to produce appropriate classroom materials. This course is intended for those registered in the Elementary Option. (3 credits).

TESL N-312
Technology in Second Language Teaching

Prerequisite: TESL N-223. This course examines audio-visual resources and their effective use in second language teaching. It familiarizes

Humanities Division

Roman law and administration in both the eastern and western part of the Late Roman Empire. No knowledge of Greek or Latin is required. (6 credits).

CLASSICS N-241 (241)
Greek Literature in Translation
A survey of the major literary achievements of Ancient Greece. Special attention will be given to epic poetry, tragedy and comedy, as well as a variety of works in prose. The historical development of each of these genres will be discussed, along with a critical analysis of each author's contribution. No knowledge of Greek is required. (3 credits). *NOTE A/See § 200.1*

CLASSICS N-242 (242)
Latin Literature in Translation
A study through selected readings in translation of representatives of the major genres of Latin literature (epic, drama, satire, rhetoric, lyric poetry, philosophy) up to the second century A.D. No knowledge of Latin is required. (3 credits). *NOTE A/See § 200.1*

ANCIENT GREEK

GREEK N-210 (211)
Introductory Course in Greek
The purpose of this course is to enable the student, in one year, to gain an adequate knowledge of Greek grammar and syntax and to read simple passages of Greek. (6 credits). *NOTE A/See § 200.1*

GREEK N-241 (212)
Greek Language and Literature
The purpose of this course is to complete the study of Greek grammar and syntax begun in Greek N-210, and to enable students to begin reading Ancient Greek authors. (6 credits). *NOTE A/See § 200.1*

GREEK N-441 (421)
Greek Literature
This is essentially a reading course involving the study of certain of the great works of Ancient Greek literature. It is assumed that students taking this course have an adequate knowledge of Greek and a fair vocabulary. (6 credits). *NOTE A/See § 200.1*

GREEK N-442 (422)
Greek Literature (Advanced)
A further study of Ancient Greek literature (to follow Greek N-441). (6 credits).

LATIN

LATIN N-210 (201)
Beginners' Latin
This course is designed for students who have had no previous Latin and is particularly recommended for those students who wish to be prepared for Latin N-240. The course offers instruction in Latin grammar, translation and prose composition. (6 credits).

NOTE: Students who have received credits toward their admission for high-school Latin or have credits for Latin 001 may not take this course for credits.

LATIN N-240 (211)
Latin Composition and Translation
This course consists of translation and literary interpretation of prescribed selections from the Latin classics in prose and poetry. In addition there is a review of Latin grammar and syntax and instruction in prose composition. (6 credits). *NOTE A/SEE § 200.1*

LATIN N-341 (421)
Latin Literature
Prerequisite: Latin N-240 This course continues the study of Latin literature begun in Latin N-240, concentrating on particular authors. Two authors will be read during the year, one of whom will normally be Virgil. (6 credits) *NOTE A/See § 200.1*

LATIN N-441 (422)
Latin Literature (Advanced)
Prerequisite: Latin N-241 A continuation of Latin N-241, concentrating on a particular period or the works of a particular author, e.g. Juvenal and Tacitus, or Lucretius. (6 credits)

LATIN N-442 (423)
Latin Literature (Advanced)
Prerequisite: Latin N-241. A parallel course to Latin N-441 covering different authors, e.g. Latin Comedy, Latin Elegists or Horace. As Latin N-441 and Latin N-442 will not usually be given in the same year, Latin N-442 may be taken before Latin N-441.

41.13.2 MODERN LANGUAGES

LITERATURE IN TRANSLATION N-350 (450)
A study of representative works of German or Russian literature. All reading and lectures will be in English. In any given year only one of these literatures will be offered. (6 credits) *NOTE A, C/See § 200.1*

LITERATURE IN TRANSLATION N-351 (451)
A student repeating Literature in Translation N-350 for a second time registers for credits under Literature in Translation N-351. (6 credits)

LITERATURE IN TRANSLATION N-352 (452)
A study of representative works of Hispanic (Peninsular and Spanish American) or Italian literature. All readings and lectures will be in English. In any given year only one of these literatures will be offered. (6 credits) *NOTE A, C/See § 200.1*

LITERATURE IN TRANSLATION N-353 (453)
A student repeating Literature in Translation N-352 for a second time registers for credits under Literature in Translation N-353. (6 credits)

GERMAN

Associate Professor
ANNAMARIE KETTER

Assistant Professor
ILSE EHMER

GERMAN N-210 (211)
Introductory Course in German
A beginners' course in the German language which is designed, in one year, to make the student conversant with the grammar, pronunciation and ordinary vocabulary of the language. Emphasis is placed upon learning to speak the language, as well as to read and write it. Lectures and laboratory. (6 credts).
NOTE A, B/See § 200.1

GERMAN N-215 (215)
German for Reading Knowledge
This course will give the student sufficient background in the structure of the language to be able to read German with reasonable competence. Practice material will be both technical and non-technical. No previous knowledge of the language is required. (6 credits).

NOTE A, B/See § 200.1 This is a terminal cours and may not be used as a prerequisite for advance courses in German.

41.13 Department of Classics, Modern Languages and Linguistics

Associate Professor of German and Chairman of the Department
ANNAMARIË KETTER

30	Minor in Greek
6	Class N-212[6], N-214[6]
24	Gr N-210[6], N-241[6], N-441[6], N-442[6]

30	Minor in Latin
6	Class N-212[6], N-214[6]
24	Lat N-240[6], N-341[6], N-441[6], N-442[6]

42	BA Major in German
30	Germ N-241[6], N-354[6], N-452[6], N-453[6], N-455[6]
12	Germ N-451[6], N-456[3], N-457[3], N-458[3], N-459[3],
6*	Ling N-221[6]; Phil N-211[6] or N-361[6]; Rel N-443[6]; Hist N-210[6]; Pol Sc N-351[6]; Geog N-423[6]; Lat N-210[6] or N-240[6]

**Optional, but recommended*

30	Minor in German
12	Germ N-241[6], N-311[6]
18	Germ N-354[6], N-451[6], N-452[6], N-453[6], N-455[6], N-456[3], N-457[3], N-458[3], N-459[3]

30	Minor in Hebrew
24	Heb N-241[6], N-441[6], N-442[6], N-451[6]
6	Ling N-221[6]; Arabic N-411[6]

30	Minor in Italian
18	Ital N-221[6], N-241[6], N-452[6]
12	'400' level credits from Loyola Faculty of Arts and Science.

30	Minor in Russian
12	Russ N-241[6], N-311[6]
18	Russ N-351[6], N-452[6], N-453[6], N-454[3], N-455[3]

NOTE: For majors and honours in Russian Studies refer to § 41.11.5 Interdisciplinary Studies.

42	BA Major in Spanish
6	Span N-221[6], N-222[6]
6	Span N-241[6]
6	Ling N-221[6]
24	Span N-412[6], N-451[6], N-452[6], N-453[6], N-454[6], N-455[6], N-456[6]

30	Minor in Spanish
6	Span N-221[6], N-222[6]
6	Span N-241[6]
18	Span, N-412[6], N-451[6], N-452[6], N-453[6], N-454[6], N-455[6], N-456[6]

51	BA Major in Indo-European Linguistics
36	Ling N-221[6], N-421[6], N-431[6], N-441[6], N-490[6], N-491[6]
3-6	Engl N-318[3] or N-460[6] or Span N-412[6]
6	Gr N-241[6] or Gr electives at '400' level
6	Lat N-240[6] or N-341[6] or Lat electives at '400' level

30	Minor in Linguistics
24	Ling N-221[6], N-421[6], N-431[6], N-441[6]
6	Arabic N-411[6]; Ling N-490[6], N-491[6]; Engl N-460[6]; Fr N-312[6], N-313[3], N-417[6], N-418[3]; Span N-412[6]

41.13.1 CLASSICS

Professor of Classics
PAUL WIDDOWS

Associate Professor of Classics and Linguistics
CHARLES BARTON

CLASSICS N-212 (212)
History of Greece and Rome

A political, cultural and social history of Greece and Rome from the Mycenaean Age to the death of the Emperor Nero (68 A.D.), with special emphasis on fifth century Athens and Rome of the Republic and Early Empire. No knowledge of Latin or Greek is required. (6 credits) *NOTE A/See § 200.1*

CLASSICS N-214 (214)
History of the Roman Empire

A political, cultural and social history of the Roman Empire from the death of the Emperor Nero to Justinian the Great. Attention will be paid to the rise of Christianity, and the continuity of

ideas and aesthetics, attention will be given to regional customs and dialectology. This course will be conducted in Italian. (6 credits)
NOTE A/See § 200.1

ITALIAN N-241 (212)
Intermediate Italian

Prerequisite: Italian N-210 or two years of high school Italian or equivalent or permission of the instructor. The course consists of a complete review of Italian grammar and a study of some of the more advanced aspects of usage. Through the reading of short stories, poetry and novels, the student is given the opportunity to acquaint himself with Italian letters and civilization. (6 credits)
NOTE A, B/See § 200.1

ITALIAN N-452 (422)
Literature of the Twentieth Century

Prerequisite: Italian N-241 or equivalent. A course in Italian literature of the twentieth century, from the turn of the century to the present. All genres will be considered. Classes will be conducted in Italian. (6 credits)

RUSSIAN

Associate Professor
ANGELIKA-TATIANA SIDOROW

RUSSIAN N-210 (211)
Introductory Course in Russian

A beginners' course in the Russian language which is designed, in one year, to acquaint the student with pronunciation, the main grammatical aspects and a basic vocabulary. Emphasis is placed on speaking, reading and writing Russian. Lectures and laboratory. (6 credits)
NOTE A, B/See § 200.1

RUSSIAN N-215 (215)
Reading Course in Russian

This course will give the student sufficient grasp of the structure of the language and sufficient basic vocabulary to be able to read Russian with the aid of a dictionary. Both technical and non-technical material will be used. (6 credits)
NOTE B/See § 200.1
NOTE: This is a terminal course and may not used as a prerequisite for advanced courses in Russian.

RUSSIAN N-241 (212)
Intermediate Russian

Prerequisite: Russian N-210 or equivalent. This course consists of a complete review of Russian grammar, composition, reading and conversation. Through reading of short stories and additional material, the student is given the opportunity of acquainting himself with Russian culture and literature. (6 credits)
NOTE A, B/See § 200.1

RUSSIAN N-311 (411)
Advanced Russian Language and Stylistics

Prerequisite: Russian N-241 or permission of the instructor. This course is intended to give increased fluency and a firmer command of the language. The emphasis of the course is on stylistics and composition. Through additional reading students are given the opportunity to acquaint themselves with the various aspects of Russian civilization. Selected texts will be discussed and analysed in Russian. (6 credits)
NOTE A/See § 200.1

RUSSIAN N-351 (421)
Introduction to 19th Century Russian Literature through the Short Story

Prerequisite: Russian N-241 or equivalent. The short story will be used both as a subject for literary study and as a reflection of the history and social preoccupations of the period.

Opportunity will be provided for discussion and some attention will be paid to composition. This course is conducted in Russian. (6 credits)
NOTE A/See § 200.1

RUSSIAN N-452 (422)
Soviet Literature

Prerequisite: Russian N-241 or equivalent. A general survey of Soviet prose, drama and poetry from 1917 to the present day. The aim of the course is to familiarize the student not only with the literature itself but also with its origins and development. Opportunity will be provided for discussions and some time will be devoted to advanced composition. This course is conducted in Russian. (6 credits)

RUSSIAN N-453 (423)
Russian Drama

Prerequisite: Russian N-241 or permission of the instructor. The course traces the development of Russian drama from the end of the 18th century to the present day. The following will be discussed: D. Fonvisin, A. Gribojedov, A. Pushkin, M. Lermontov, N. Gogol, A. Ostrowski, A. Chekhov, A. Tolstoi, M. Gorki, A. Afinogenov, L. Leonov. This course is conducted in Russian. (6 credits)

RUSSIAN N-454 (454)
Study of an Individual Russian Author I

Prerequisite: Russian N-241 or equivalent. This course will consist of the detailed study of a Russian author, e.g. L.N. Tolstoy, F.M. Dostojevskii, N. V. Gogol. The chosen author will vary from time to time, in accordance with the needs of the students. (3 credits)

RUSSIAN N-455 (455)
Study of an Individual Russian Author II

Prerequisite: Russian N-241 or equivalent. This course will consist of the detailed study of a Russian author, e.g. A. S. Pushkin, M. Ju. Lermontov, I. A. Goncharov. The choice of author will vary from time to time, in accordance with the needs of the students. (3 credits)

SPANISH

Associate Professor of Spanish and Linguistics
JOHN D. GRAYSON

Associate Professor of Spanish and Italian
JOSEPH A. MACALUSO

SPANISH N-201 (201)
Introduction to Spanish I (3 credits)

SPANISH N-202 (202)
Introduction to Spanish II

These two courses constitute a beginners' course in the Spanish language which is designed to acquaint the student in one year with the main grammatical principles and basic vocabulary. Practice is given in reading, writing and conversation, particular emphasis being placed on oral work. In the second term, classes are conducted as far as possible in Spanish. Lectures and laboratory. (3 credits) *NOTE A, B/See § 200.1 Spanish N-201*

NOTE: Spanish N-201 and N-202 are equivalent to two years' study at the secondary or collegial level. Students having one year of secondary or collegial Spanish will register only for the second course, Spanish N-202.

SPANISH N-221 (429)
Spanish Civilization

Prerequisite: Spanish N-241 or equivalent. This course is designed to acquaint the student with Spain's intellectual and cultural history as reflected in her writers. Although it is primarily concerned with ideas and aesthetics, attention will also be given to the development of language, dialectology, customs and folklore. This course is

GERMAN N-241 (212)
German Language and Literature (Intermediate)
Prerequisite: German N-210 or equivalent. Advanced instruction in the language. Emphasis upon idiom and usage in conversation and composition. Representative readings from the works of German writers. (6 credits).
NOTE A, B/See § 200.1

GERMAN N-311 (411)
Advanced German Language and Stylistics
Prerequisite: German N-241 or equivalent. This course is intended to give the student increased fluency and a firmer command of the language. The emphasis of the course is on stylistics and composition. The subject matter will be approached through a study of German civilization. (6 credits).
NOTE A/See § 200.1

GERMAN N-354 (421)
A Study of the Deutsche Novelle
Prerequisite: German N-241 or equivalent. Advanced composition and oral work. A study of the Deutsche Novelle from Goethe to Kafka. This course is conducted entirely in German. (6 credits).
NOTE A/See § 200.1

GERMAN N-451 (424)
German Literature of the Sixteenth and Seventeenth Centuries
Prequisite: German N-241. A detailed study of representative writers of this period, such as Luther, Brant, Hans Sachs, Silesius, Grimmelshausen and others. Classes will be conducted in German. (6 credits).

GERMAN N-452 (422)
German Literature from 1750 to 1830
Prerequisite: German N-241 or equivalent. Study of the works of Lessing, Goethe, Schiller, Brentano and others. This course is conducted entirely in German. (6 credits).

GERMAN N-453 (423)
History of the German Drama
Prerequisite: German N-241 or equivalent. A study of German drama from its beginnings to modern times. Classes will be conducted in German. (6 credits).

GERMAN N-455 ((451)
Reading Course in the Modern German Novel
Prerequisite: German N-354 or N-311. A study of the German novel since 1900. There will be no class periods, and students will work under the direct supervision of the instructor. Regular assignments will be given, and written and oral examinations will be given at the end of the course. (6 credits)

GERMAN N-456 (425)
The 'Hörspiel'
Prerequisites: German N-241 and N-311. A study of one of the youngest art forms which was developed with the help of and for a new medium, the radio. Literary and technical aspects as well as the most representative writers, i.e. Eich, Dürrenmatt, Böll, Hildesheimer and others, will be discussed. Classes will be conducted in German. (3 credits)

GERMAN N-457 (426)
German Poetry from the Middle Ages to Modern Times
Prerequisites: German N-241 and N-311. A conspectus of German poetry through the centuries. Outstanding examples of representative poets will be studied in detail. Classes will be conducted in German. (3 credits)

GERMAN N-458 (427)
Study of an Individual German Author I
Prerequisites: German N-241 and N-311. This course will consist of the detailed study of a German author, e.g. Kafka, Rilke, Goethe. Classes will be conducted in German. (3 credits)

GERMAN N-459 (428)
Study of an Individual German Author II
Prerequisite: German N-241 and N-311. This course will consist of the detailed study of a German author, e.g. Brecht, Büchner, Lenz. Classes will be conducted in German. (3 credits)

HEBREW

Associate Professor of Spanish and Supervisor of Hebrew.
JOSEPH A. MACALUSO

HEBREW N-210 (211)
Introductory Course in Hebrew
A beginners' course in Hebrew, spoken and written, with reading of classical and modern texts. Lectures and laboratory. (6 credits) *NOTE A/See § 200.1 Students who have credits for Hebrew 023 or whose schooling has been conducted in Hebrew will not be admitted to this course.*

HEBREW N-241 (212)
Intermediate Course in Hebrew
Prerequisite: Hebrew N-210, or two or three years of high-school Hebrew or equivalent. Readings in the Bible and an introduction to modern Hebrew literature. This course will also complete the study of Hebrew grammar and syntax begun in Hebrew N-210, with special emphasis on modern Hebrew usage. (6 credits)
NOTE A, B/See § 200.1

HEBREW N-441 (422)
From the Talmudic Period to the Haskalah
Prerequisite: Hebrew N-241 or equivalent. Hebrew literature from Talmudic times to the Enlightenment. Classes will be conducted in Hebrew. (6 credits)

HEBREW N-442 (424)
Medieval Literature (The Golden Age)
Prerequisite: Hebrew N-441 or N-451 or equivalent. A study of the literature of the Hebrew Golden Age with emphasis on Maimonides, Judah Halevi, Ibn Ezra, Ibn Gabirol, Rashi and Gersonides. Classes will be conducted in Hebrew. (6 credits)

HEBREW N-451 (423)
Modern Literature
Prerequisite: Hebrew N-241 or equivalent. A study of Hebrew literature of the 19th and 20th centuries. This course is conducted in Hebrew. (6 credits)
NOTE A/See § 200.1

ITALIAN

Associate Professor of Spanish and Italian
JOSEPH A. MACALUSO

ITALIAN N-210 (211)
Introductory Course in Italian
A beginners' course in the Italian language which is designed, in one year, to acquaint the student with the main grammatical principles and basic vocabulary. Practice is given in reading, writing and conversation with particular emphasis on oral work. Lectures and laboratory. (6 credits)
NOTE A, B/See § 200.1

ITALIAN N-221 (221)
Italian Civilization
Prerequisite: Italian N-241 or equivalent or permission of the Department. This course is designed to introduce the student to Italy's cultural, artistic and social institutions as reflected in her *belle arti*, literature and commercial history. Certain literary works will be analysed as a reflection of her people. Generally, the period to be covered will encompass from Italy's earliest times until the present era. Although primarily concerned with

60 BA Honours in English

6*	Engl N-241[6], N-260[6], N-262[6], N-263[6], N-267[6]
6	Engl N-231[3], N-232[3], N-281[6], N-282[6], N-283[6], N-287[6]
18	Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-460[6], N-466[6]
6	Engl N-374[6], N-375[6], N-376[6]
6	Engl N-244[6], N-343[6], N-344[6], N-348[6], N-440[6]
12	Engl electives (excluding N-211, N-311)
6	Engl electives at '400' level

*One of Engl N-225[6], *N-226*[6], *N-227*[6], *may be substituted for one of these credits.*
NOTE: At least 36 credits must be taken at the '300' or '400' level.

60 BA Honours in English and Religion

12	Engl N-333[6], N-430[6]
6	Engl N-375[6] or N-376[6]
12	Engl N-244[6], N-334[6], N-335[6], N-336[6], N-337[6], N-348[6], N-374[6], N-375[6] or N-376[6]
12	Rel N-301[3], N-302[3], N-341[6]
6	Rel N-211[6], N-213[6], N-361[6], N-362[6], N-363[6]
6	Rel N-443[6], N-465[6]
6	Rel N-311[6], N-312[6], N-313[6], N-325[3], N-326[3], N-327[3], N-328[3], N-330[3], N-361[6]

41.14.2 COURSE DESCRIPTIONS

ENGLISH N-211 (211)
Composition
This course is designed to help the students to develop skills in writing, research, and documentation, so that they may be able to prepare written accounts of their work clearly, concisely, and in a logically organized way. (6 credits)

ENGLISH N-225 (225)
Creative Writing: Poetry
A seminar in the writing and criticism of poetry, including detailed discussion and written criticism of the students' work, and, at the discretion of the instructor, the study of selected poems. Students taking English N-225 are urged to take English N-231 as well. (6 credits)

ENGLISH N-226 (219)
Creative Writing: Prose
A seminar in the techniques of short fiction, including investigations of and exercises in a variety of creative and technical problems, as well as analysis and criticism of the students own work. Students may be required to read selected works of short fiction. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-227 (227)
Creative Writing: Drama
A seminar in the writing of plays, including an exploration of dramatic forms and techniques. The students are expected to submit work of their own for discussion and analysis. (6 credits)

ENGLISH N-231 (261)
Introduction to Poetry
A study of poetry and its forms with emphasis upon the art of close reading. (3 credits) *NOTE A/See § 200.1*

ENGLISH N-232 (266)
Short Fiction
A study of forms and techniques of the short story, the Novella, and what have come to be called in contemporary literature "fictions". (3 credits) *NOTE A/See § 200.1*

ENGLISH N-237 (237)
Children's Literature
A survey and analysis of literature for children, undertaken with the aim of developing a critical vocabulary and of arriving at workable standards of assessment. The kinds of literature discussed will include works written for adults but traditionally read by children as well, works specifically written or adapted for children, fairy tales and other children's versions of folklore and myth, nursery rhymes and other children's verse. The course will be of general interest to students of literature, and should prove especially helpful to those who teach children in the schools. (6 credits)

ENGLISH N-241 (221)
Major Writers in English
An introduction to major periods of English literature through the study of such representative authors as Chaucer, Shakespeare, Marlowe, Jonson, Donne, Milton, Swift, Pope, Blake, Coleridge, Wordsworth, Keats, Shelley, Dickens, Hardy, Browning, Tennyson, Conrad, Lawrence, Yeats, Eliot, Woolf, Joyce. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-244 (244)
Canadian Literature
An introductory survey of Canadian prose and poetry written in or translated into English, from their origins to the present. (6 credits)

ENGLISH N-260 (217)
Myth in Literature
The sources, development, and continuing function of some central Mediterranean myths. The course defines the nature and functions of myth, traces the most influential myths from their first appearance in literature to their transformation in the Christian art of Europe, and goes on briefly to examine their use by contemporary writers. The primary texts include the Bible in the King James version, and such works as the Apocrypha, the *Odyssey*, selected Greek tragedies, and Ovid's *Metamorphoses*. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-262 (262)
Medieval Literature in Translation
An introductory study of some major works in England and Europe between 400 and 1400, beginning with St. Augustine, and including examples of epic, Grail literature and courtly romance, such as *Beowulf, The Song of Roland, The Cid*, Chrétien de Troyes' *Parsifal, Tristan and Isolde, The Romance of the Rose*, and parts of Dante's *Divine Comedy*. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-263 (240)
European Literature from the End of the Middle Ages to the onset of Modernism
A study of some of the classical works of European literature from Dante to Dostoevsky, including such writers as Boccaccio, Rabelais, Cervantes, Rousseau and Goethe, with emphasis on evolving cultural patterns leading from Faith to Reason and beyond. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-267 (267)
The Origins of Drama
An introductory study of Greek and Roman dramatists, and the medieval drama, both English and Continental. The course will be concerned with dramatic types, theory and form, and with the significance of this drama to the later English stage. (6 credits)

41.14 Department of English

Associate Professor and Chairman of the Department
MERVIN BUTOVSKY

Professors
WYNNE FRANCIS
MATTHEW HODGART
RYTSA TOBIAS

Associate Professors
GERALD AUCHINACHIE
HENRY BELSSEL
ROSLYN BELKIN
CLARK BLAISE
MICHAEL BRIAN
AUDREY BRUNÉ
HOWARD FINK
MALCOLM FOSTER
STANTON HOFFMAN
DAVID KETTERER
ELIZABETH MacLEAN
DAVID McKEEN
LEONARD MENDELSOHN
JOHN MOSS
EDWARD PECHTER
LEWIS POTEEF
ABRAHAM RAM
G. DAVID SHEPS
RICHARD SOMMER

Assistant Professors
PATRICIA MORLEY
EYVIND RONQUIST

Sessional Lecturer
BARBARA OPALA

41.14.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

72 BA Honours in English and Philosophy

18	Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-374[6], N-375[6], N-487[6]
18	Engl N-231[3], N-232[3], N-244[6], N-344[6], N-348[6], N-351[6], N-353[6], N-356[6], N-363[6], N-367[6], N-376[6], N-430[6], N-448[3], N-456[3], N-459[6], N-460[6], N-466[6], N-476[6]
6	Phil N-210[6], N-211[6] or, if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6], N-369[6]
6	Phil N-231[6], N-271[6], N-273[6], N-301[6], N-361[6], N-369[6], N-372[3], N-374[3], N-376[3], N-378[3]
6	Phil N-369[6], N-405[6]
6	Phil N-321[6], N-365[6], N-396[3], N-401[6], N-403[6], N-405[6], N-407[6], N-431[6], N-493[6]: Int St N-241[3], N-242[3]

54 BA Major in English

6	(A)* Engl N-241[6], N-260[6], N-262[6], N-263[6], N-267[6] or (B) Engl N-281[6], N-282[6], N-283[6], N-287[6], N-231[3], N-232[3]
18	Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-460[6], N-466[6]
6	Engl N-374[6], N-375[6], N-376[6]
6	Engl N-244[6], N-343[6], N-344[6], N-348[6], N-440[6]
18	Engl electives at '300' and '400' level (excluding N-311)

**One of Engl N-225[6], N-226[6], N-227[6] may be substituted for one course in (A).*

30 BA Minor in English

6	Engl N-231[3], N-232[3], N-281[6], N-282[6], N-283[6], N-287[6]
6	Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-460[6], N-466[6]
6	Engl N-374[6], N-375[6], N-376[6]
12	Engl electives at '300' and '400' level (excluding N-311)

ENGLISH N-367 (463)
The English Novel from Defoe to Dickens

A study of the origins and early development of the English novel, including such forms as the epistolary, the picaresque, the Gothic and historical novel, and such major writers as Fielding, Richardson, Sterne, Austen, Scott, the Brontes, George Eliot, Thackeray. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-368 (466)
The English Novel from Dickens to Conrad

A study of the later Victorian and Edwardian novel, including such writers as Trollope, Meredith, Butler, Hardy, James, Wells, Galsworthy, Bennett and Forster. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-374 (454)
Chaucer

A study of the major poetry of Chaucer, emphasizing *The Canterbury Tales* and *Troilus and Criseyde*. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-375 (253)
Shakespeare

An examination of Shakespeare's artistic achievement in some of the major plays. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-376 (455)
Milton: The Puritan as Poet

A study of Milton's poetry, informed by the aesthetic principles articulated in his prose and guided by his acknowledged admiration for Spenser. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-386 (486)
Literature, Ideology and Society

Prerequisite: Second year standing. Studies in the relations between literature and its social, cultural and political environment. The content of this course may vary from year to year and may include such topics as the relations between modern anglo-Irish literature and the Irish nationalist movement; social change and the evolution of forms of characterization in fiction; the theory and practice of the avant-garde; or confessional modes in literature in relation to social and political messianism. (6 credits)

ENGLISH N-425 (418)
Advanced Creative Writing: Poetry

Prerequisite: English N-225 or approved work. A workshop in the writing of poetry. The students are expected to enter this course with competence in the fundamentals of the form, and to go on, by experimenting more fully with its materials and techniques, to demonstrate, their further progress in the craft. (6 credits)
NOTE A/See § 200.1

ENGLISH N-426 (419)
Advanced Creative Writing: Prose

Prerequisite: English N-226 or approved work. A workshop in the writing of fiction. The students are expected to enter this course with competence in the fundamentals of the form, and to go on, by experimenting more fully with its materials and techniques, to demonstrate, their further progress in the craft. (6 credits)
NOTE A/See § 200.1

ENGLISH N-427 (427)
Advanced Creative Writing: Drama

Prerequisite: English N-227 or approved work. A workshop in the writing of plays. The students are expected to enter this course with competence in the fundamentals of the form, and to go on, by experimenting more fully with its materials and techniques, to demonstrate, their further progress in the craft. (6 credits)

ENGLISH N-430 (475)
The Aesthetic and Religious Experience in Literature

Prerequisite: Second year standing. An interdisciplinary course which explores the relationships between literature and religion through practical criticism, literary theory, aesthetics and theology. (6 credits)
NOTE A/See § 200.1

ENGLISH N-440 (440)
The Literatures of Canada and the United States

Prerequisite: One of English N-244, N-348. It would be to the students advantage to enter this course with knowledge of both literatures. Studies in common and contrasting problems in the two national literatures. (6 credits)

ENGLISH N-442 (442)
World Literatures Written in English

Prerequisite: Second year standing. Studies of works in English from selected areas such as the Caribbean, New Zealand, Australia, Asia and Africa, by such writers as Naipaul, Walcott, Ashton-Warner, White, Narayan, Paton, Lessing and Achebe. (6 credits)
NOTE A, C/See § 200.1

ENGLISH N-443 (443)
World Literatures Written in English

A student repeating English N-442 for credits registers under English N-443. (6 credits)

ENGLISH N-448 (448)
Special Studies in Canadian Literature

Prerequisite: One of English N-343, N-344. An intensive study of a limited aspect of Canadian literature which may deal, from year to year, with an individual author or work, or a particular problem, such as "Regionalism and the Diction of Canadian Poetry", "Prairie Fiction" or "Canadian Drama". (3 credits)
NOTE A, C/See § 200.1

ENGLISH N-449 (449)
Special Studies in Canadian Literature

A student repeating English N-448 for credits registers under English N-449. (3 credits)

ENGLISH N-456 (464)
Special Studies in Modern Fiction

Prerequisite: One of English N-344, N-337, N-356. A detailed study of an individual author or work of fiction, or a specific problem, in any modern literature written in or translated into English. (3 credits)
NOTE A, C/See § 200.1

ENGLISH N-457 (464)
Special Studies in Modern Fiction

A student repeating English N-456 for credits registers under English N-457. (3 credits)

ENGLISH N-459 (459)
Contemporary Literature

Prerequisite: Six Credits in Modern Literature, e.g. English N-344, N-337, N-348, N-356, N-351 or N-353. A study of poetry, prose fiction and drama, written in or translated into English since the Second World War. This course is intended for the student whose exploration of modern literature has already suggested to him something of the radical experimentation in form which characterizes contemporary literature. (6 credits)

ENGLISH N-460 (481)
Old English

A study of the language and literature of the Anglo-Saxon era, chiefly of the *Beowulf* epic. (6 credits)
NOTE A/See § 200.1

ENGLISH N-466 (483)
Middle English Literature

A study of literature written in the English dialects from 1200 to 1500, including works such as *Sir Gawain and the Green Knight* and other romances, early lyrics, religious prose, drama, and selections from Layamon's Arthurian *Brut*, Langland's *Piers Plowman*, and Malory's *Morte Darthur*. (6 credits)
NOTE A/See § 200.1

ENGLISH N-476 (453)
Special Studies in Shakespeare

Prerequisite: English N-375. An exploration in depth of individual plays and poems by Shakes-

ENGLISH N-281 (281)
Tragedy: A Literary Mode

A study of varieties of tragic form and sensibility in Western literature. The course includes writers chosen from antiquity to the present, both within and outside the English tradition, such as Shakespeare, Euripides, Hardy, Tolstoy, Webster, Racine, Faulkner, Buchner, Rilke and Chekhov. (6 credits)

ENGLISH N-282 (282)
Comedy: A Literary Mode

A study of the varieties of comic form and sensibility in Western literature. The course includes writers chosen from antiquity to the present, both within and outside the English tradition, such as Jonson, Aristophanes, Sterne, Cervantes, Meredith, Balzac, Gogol, Molière, Holberg, Leacock, Morgenstern and Amis. (6 credits)

ENGLISH N-283 (283)
Satire: A Literary Mode

Its vision and its form, traditional and contemporary. The course includes writers chosen from antiquity to the present, both within and outside the English tradition, such as Chaucer, Juvenal, Lucian, Swift, Erasmus, Voltaire, Thackeray, Grass, Roth, Beckett, Waugh, Richler and Orwell. (6 credits)

ENGLISH N-287 (287)
Critical Approaches to Literature

A study of the variety of major theories and their practical application to works of literature, with special emphasis on 20th century criticism. (6 credits)

ENGLISH N-311 (411)
Non-Fiction Writing

This course is designed for students already in control of the basic techniques of composition who wish to further develop their ability in writing in a variety of genres, including feature articles, news stories, biographies, reports and reviews. the students' work is given analysis and evaluation by the instructor and by fellow classmates in a workshop setting. (6 credits)*NOTE A/See § 200.1*

ENGLISH N-318 (280)
History and Structure of the English Language

The course deals with the linguistic and historical development of the English language. The influence of language changes upon the literature will also be considered. (3 credits)*NOTE A/See § 200.1*

ENGLISH N-333 (431)
English Renaissance Literature

A study of poetry and prose in England from More to Milton, including such writers as Erasmus, Wyatt, Surrey, Sidney, Spenser, Bacon, Donne, the Metaphysical poets, Jonson, the Caroline lyricists, Browne. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-334 (434)
English Literature of the Restoration and 18th Century

A study of poetry and prose from the 1660's to the 1780's, including such major writers as Dryden, Swift, Pope and Johnson. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-335 (435)
English Literature of the Romantic Period

A study of poetry and prose, chiefly that of Blake, Wordsworth, Coleridge, Byron, Shelley and Keats. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-336 (436)
Victorian Literature

A study of English poetry and prose from the 1830's to the end of the nineteenth century, including such major writers as Tennyson, Browning, Hopkins, Carlyle, Newman, Ruskin, Dickens, Thackeray and Eliot. (6 credits)*NOTE A/See § 200.1*

ENGLISH N-337 (437)
Modern British and American Literature

A study of works in English from what has now emerged as the "Modern" period, extending from the turn of the century to World War II, and including such writers as Conrad, Joyce, Lawrence, Eliot, Yeats, Dylan Thomas, Stevens, Hemingway, Faulkner, Frost and Synge. (6 credits)*NOTE A/See § 200.1*

ENGLISH N-343 (246)
Canadian Literature from the 1820's to the 1930's

Prerequisite: Second year standing. A study of prose, poetry and drama, principally written in English, including such writers as McCulloch, Haliburton, Moodie, DeMille, Kirby, Lampman, Roberts, Pratt, Grove and Stead. (6 credits)

ENGLISH N-344 (444)
Modern Canadian Literature

Prerequisite: English N-244. A study of prose, poetry and drama, principally written in English, from the 1930's to the present, including such writers as Laurence, MacLennan, Richler, Lowry, Klein, Callaghan, Layton, Livesay, Birney, Avison, Reaney, Nowlan and Ryga. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-348 (445)
American Literature

A survey of the literature of the United States beginning with the early writers and their optimistic vision of a new society, and studying such problems as the transformations and inversions of the "American Dream" in such writers as Poe, Hawthorne, Melville, Twain, Whitman and Fitzgerald. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-351 (461)
Modern Poetry

An examination of the characteristic elements of twentieth-century poetry, in the context of a study of such major poets as Yeats, Eliot, Pound, Stevens and Auden. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-353 (462)
Modern Drama

A study of the main currents in Western drama since Ibsen. This course will include such representative playwrights as Chekhov, Lorca Strindberg, Pirandello, O'Neill, Brecht, Pinter, Beckett and Weiss. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-356 (446)
Modern European Literature

A survey of some of the major European writers (in translation) of the last hundred years, including such writers as Dostoevsky, Kafka, Mann, Strindberg, Valéry, Pirandello and Sartre. (6 credits) *NOTE A/See § 200.1*

ENGLISH N-363 (468)
English Renaissance Drama

A study of English drama from the Tudor interlude to the closing of the theatres in 1642, including such dramatists as Kyd, Marlowe, Dekker, Jonson, Beaumont and Fletcher, Webster, Middleton and Ford. Some consideration will also be given to Shakespeare. (6 credits)*NOTE A/See § 200.1*

ENGLISH N-364 (264)
Restoration and Eighteenth-Century Drama

A study of the English stage from Dryden to Sheridan, including such dramatists as Etherege, Otway, Wycherley, Vanbrugh, Congreve, Gay, Lillo and Goldsmith. (3 credits)

ENGLISH N-365 (268)
The English Theatre in the Nineteenth Century

A study of drama and dramatic modes from Shelley to Shaw, including forms such as the melodrama, the Gothic thriller, Romantic verse drama, comedy, farce, burletta, operetta, and the "new drama" of the 1890's. Among features that may be considered are innovations such as limelight and the act curtain, the emphasis on spectacle, and the phenomena of the star system and the actor-manager. (3 credits)

41.15 Fine Arts

The Faculty of Fine Arts was formed in June, 1974 and will offer some programmes common to both campuses. The programme descriptions and information on the location of the courses are given in the section entitled Faculty of Fine Arts, beginning in § 81.

peare, as well as particular problems presented by them. The topic considered in any one year might be "the Problem Plays", "the Romances", "Mask and Disguise", or "the Shakespeare play as Satire". (3 credits)
NOTE A/See § 200.1

ENGLISH N-478 (478)
Special Studies in Renaissance Literature
Prerequisite: One of English N-333, N-363. This course is designed for an intensive study of a limited aspect of the poetry, prose or drama of the period, and may deal, from year to year, with such topics as "the Sonnet Sequences", "the Metaphysical Poets", "Rhetoric, Poetics and Critical Theory" and "Renaissance Fiction". (3 credits)
NOTE A, C/See § 200.1

ENGLISH N-479 (479)
Special Studies in Renaissance Literature
A student repeating English N-478 for credits registers under English N-479. (3 credits)

ENGLISH N-487 (467)
Theories and Criticism of Literature
Prerequisite: English N-287. This course explores problems in criticism and theoretical approaches to literary art and experience from antiquity to the present, including such problems as symbol and metaphor, instruction and delight, mimesis and catharsis, form and inspiration, audience and social value, convention and genius. (6 credits)
NOTE A/See § 200.1

ENGLISH N-492 (492)
Seminar in a Special Subject
Prerequisite: Second year standing. This course is designed to provide an opportunity for study and discussion of literature at a relatively advanced level. It is taught, from year to year, by different members of the English Department, and the subject changes to accord with the special interests of each instructor. (6 credits)
NOTE C/See § 200.1

ENGLISH N-493 (493)
Seminar in a Special Subject
A student repeating English N-492 for credits registers under English N-493. (6 credits)

ENGLISH N-496 (496)
Seminar in a Special Subject
Prerequisite: Second year standing. This course is designed to provide an opportunity for study and discussion of literature at a relatively advanced level. It is taught, from year to year, by different members of the English Department and the subject changes to accord with the special interests of each instructor. (3 credits)
NOTE C/See § 200.1

ENGLISH N-497 (497)
Seminar in a Special Subject
A student repeating English N-496 for credits registers under English N-497. (3 credits)

41.14.3 JOURNALISM

30	Minor in Journalism
30	Journ N-201[6], N-205[3], N-301[6], N-305[3], N-401[6], N-405[3], N-410[3]

JOURNALISM N-201
Writing and Reporting I
This course gives training in basic reporting and newswriting. Students will practise writing news and will receive out-of-classroom assignments. (6 credits)

JOURNALISM N-205
History of Journalism
A history of the news media in the English-speaking world, starting with the government gazettes of seventeenth-century England and their illegal, underground competition, through the "news" papers of the eighteenth century, the rise of the yellow press, the human interest story, the penny press in the nineteenth century, down to today's corporate press. The course is designed to show that our expectations of the news media are not inherent in human nature, but are the result of historical processes that continue to evolve. (3 credits)

JOURNALISM N-301
Writing and Reporting II
Prerequisite: Journalism N-201 A continuing general workshop in news and features writing. (6 credits)

JOURNALISM N-305
The Media in Quebec
This course studies the special characteristics of Quebec media, and focuses on the effect the media have had on the shaping of modern Quebec. It will analyse the straight press, the pop press, radio and television. (3 credits)

JOURNALISM N-401
Senior News Seminar
Prerequisite: Journalism N-301. The students will produce each term, individually or as part of a team a major investigative feature suitable for publication in a newspaper, magazine, or via radio or television. Seminars will analyse the problems encountered in gathering and writing or producing such news. (6 credits)

JOURNALISM N-405
Legal Issues
Prerequisite: Journalism N-201. This course will inform the students of those aspects of the civil codes and the criminal law of Canada that could directly affect their work as journalists — copyright, libel, slander, obscenity, etc. (3 credits)

JOURNALISM N-410
Editing and Production
Prerequisite: Journalism N-301. This course will introduce the students to editing and production procedures — technical and intellectual — appropriate to different media. (3 credits)

fail to meet the requirements for admission to French N-211. Intensive class instruction and laboratory drill should permit the student to master the basic structures of French in both their written and oral aspects. Satisfactory progress in this course will admit students to French N-211. Lectures and laboratory. (6 credits) *NOTE A, B/See § 200.1 Students who have received credits toward their admission for high school French may not take this course for credits. Any student who is not sure of his standing must consult the chairman of the Department prior to registration.*

FRANÇAIS N-202 (202)
Français élémentaire II

Préalable: Français N-201 ou équivalent ou deux ans de cours de français à l'école secondaire. Révision des structures de base du français élémentaire, élargissement du vocabulaire, pratique de la conversation, phonétique corrective. On cherchera à amener l'élève à une meilleure compréhension du français oral et à une plus grande aisance d'expression par des conversations dirigées et l'emploi d'enregistrements dans la salle de classe. Les connaissances de l'élève en français écrit seront maintenues et augmentées par un emploi judicieux d'exercices écrits. (demi-cours sans crédit)

FRANÇAIS N-203 (203)
Français élémentaire III

Préalable: Français N-202 ou équivalent ou trois ans de cours de français à l'école secondaire. Approfondissement des connaissances orales et écrites du français élémentaire. (demi-cours sans crédit)

FRANÇAIS N-211 (211)
Langue II et composition élémentaire

Préalable: Français N-201 ou quatre ans de cours de français à l'école secondaire ou équivalent ou l'autorisation du département. Ce cours, destiné aux étudiants ayant déjà une certaine préparation en français oral et écrit qui désirent parfaire leurs connaissances pratiques de la langue, comporte une étude intensive des structures au laboratoire, de nombreux devoirs écrits et l'analyse de certains textes français et québécois. La structure et le contenu du cours sont les mêmes pour toutes les sections, mais le choix des romans étudiés dépend de chaque professeur. (6 crédits) *NOTE A, B/See § 200.1*

FRANÇAIS N-214 (214)
Langue II et composition

Préalable: Français N-211. Ce cours permet d'acquérir plus d'aisance et de correction dans l'expression orale et écrite en français. Il convient particulièrement aux étudiants qui ont l'intention d'enseigner le français ou de se spécialiser dans cette langue. Ce cours, donné entièrement en français, comprend la rédaction de compositions sur des sujets variés, des exposés oraux suivis de débats, l'étude de textes et de romans choisis par le professeur de chaque section, des exercices écrits menant à une meilleure connaissance de la grammaire et de la syntaxe. (6 crédits)
NOTE A/See § 200.1 Les étudiants qui ont fait leurs études en français ne seront pas admis dans ce cours.

FRANÇAIS N-222 (222)
La littérature française moderne

Préalable: Français N-211. Aucun préalable n'est exigé pour les étudiants dont la première langue est le français. Ce cours est surtout destiné aux étudiants qui n'ont pas l'intention de se spécialiser en français et en particulier à ceux qui choisiraient leur cours obligatoire de littérature en littérature française. Le but du cours est d'encourager l'appréciation du roman comme oeuvre littéraire et comme expression significative de l'expérience occidentale des cent dernières années. (6 crédits) *NOTE A/See § 200.1*

FRANÇAIS N-241 (241)
Introduction à l'histoire de la culture et de la civilisation françaises

Préalable: Français N-211. Abondamment illustré de projections, ce cours a pour but essentiel d'amener les étudiants à replacer la littérature dans son contexte historique, social, politique et artistique. (6 crédits)

FRANÇAIS N-310 (411)
Composition avancée I

Préalable: Français N-214. Ce cours traite des différentes méthodes de la composition française: description, narration et dissertation: un intérêt particulier est cependant accordé à cette dernière ainsi qu'à l'analyse de textes vu leur importance pour les étudiants qui songent à préparer mémoires et thèses. (6 crédits) *NOTE A/See § 200.1*

FRANÇAIS N-312 (412)
Histoire de la langue française

Préalable: Français N-214. Ce cours retrace l'évolution de la langue du latin vulgaire au français contemporain. Les étapes successives de cette évolution sont illustrées par l'étude de textes appropriés. Le cours est donné en français. (6 crédits)

FRANÇAIS N-313 (413)
La phonétique française

Préalable: Français N-214 pour les étudiants dont la langue maternelle est le français, 6 crédits en langue ou en littérature françaises. Étude systématique des habitudes articulatoires du français en comparaison avec celles de l'anglais. Introduction aux principes de l'analyse phonologique; groupes consonantiques possibles ou impossibles dans les deux langues. Étude de l'aspect physiologique de la parole; propriétés des voyelles et des consonnes en français. Étude des phénomènes prosodiques: intonation, rythme, accent. Aperçu de la phonétique acoustique et expérimentale. (3 crédits)

FRANÇAIS N-314 (414)
Stylistique comparée et traduction

Préalable: Français N-214 ou, pour les étudiants dont la langue maternelle est le français, 6 crédits en langue ou en littérature française. Etude des ressources stylistiques du français par rapport à celles de l'anglais. Le passage entre les deux langues est étudié en fonction des tendances fondamentales de chaque langue, tant du point de vue grammatical et lexical que du point de vue du contexte culturel. Au cours de l'année, les étudiants doivent faire des exercices de stylistique comparée, des traductions de textes, soit vers le français, soit vers l'anglais et des analyses de traductions littéraires. (6 crédits)

FRANÇAIS N-321 (221)
Panorama de la littérature française

Préalable: Français N-214. Aucun préalable n'est exigé pour les étudiants qui ont fait leurs études en français. Ce cours s'adresse aux étudiants qui ont choisi la littérature française comme domaine de spécialisation principale ou secondaire. A côté d'un aperçu général de l'évolution de la littérature française des origines à nos jours, ce cours comprend une initiation aux techniques des études littéraires: principes de la versification, dissertation, explication de texte, etc . . . Les travaux doivent être rédigés en français. (6 crédits) *NOTE: A/See § 200.1*
Nous recommandons aux étudiants de suivre ce cours en même temps que le français N-241.

FRANÇAIS N-331 (231)
Littérature et culture québécoises

Préalable: Français N-211 ou 211. Ce cours offre un aperçu général de l'histoire — politique, économique, sociale et culturelle — du Québec, toile de fond de la production littéraire; il analyse les courants nouveaux nés du processus de décolonisation et leurs reflets dans l'expression littéraire. (6 crédits) *NOTE A/See § 200.1*

FRANÇAIS N-381 (481)
Méthodologie de l'enseignement du français

Préalable: Français N-214 ou équivalent, et une certaine expérience de l'enseignement du français, ou l'autorisation du département. Le premier semestre est consacré à l'analyse des

41.16 Department of French

Professor and Chairman of the Department
GILBERT TAGGART

Professor in the Conservatory of Cinematographic Art
SERGE LOSIQUE

Associate Professors
LÉANDRE BERGERON
PAUL D'HOLLANDER
MICHEL EUVARD
ALBERT JORDAN
CLAUDE LEVY
PIERRE PARC
MAIR VERTHUY

Assistant Professor
JEAN SCHNEIDER

41.16.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60	BA Honours in French
	Pattern A (Literature emphasis)
36	Fr N-214[6], N-241[6], N-310[6], N-321[6], N-331[6], N-491[6]
24	Fr Literature electives

60	BA Honours in French
	Pattern B (Linguistics emphasis)
24	Fr N-241[6], N-310[6], N-321[6], N-331[6]
24	Fr N-312[6], N-314[6], N-410[6], N-417[6]
12	Fr electives at '300' or '400' level

48	BA Major in French
6	Fr N-214[6], N-310[6]
18	Fr N-241[6], N-321[6], N-331[6]
12	Fr electives at '300' or '400' level (in consultation with Department)

72	BA Major in French/English Translation
18	Fr N-214[6], N-310[6], N-429[6]
18	Engl N-211[6], N-311[6], N-337[6]
6	Fr N-222[6], N-241[6], N-321[6], N-331[6]
6	Engl N-241[6], N-244[6], N-356[6]
24	Fr N-314[6], N-415[6], N-440[3], N-441[3], N-442[3], N-443[3].

30	Minor in French
6	Fr N-214[6], N-310[6]
12	Fr N-241[6], N-321[6], N-331[6]
12	Fr electives at '300' or '400' level

41.16.2 DEPARTMENT OF FRENCH

Where to start studies in French at the university level:

French N-201 is designed for students who have had no French, or up to two years of high-school French in the Province of Quebec or equivalent.

French N-211 is intended for students having no substantial amount of course work in French beyond the High School level.

French N-214 is intended for students who have taken one or more courses beyond High School containing a substantial amount of written French.

French N-310 is intended for students whose schooling at the High School level has been conducted in French.

Students who do not fall into one of these categories are asked to consult the Department of French.

Since university level credtis cannot be given for French conversation only, all language courses contain a varying quantity of written work, grammatical study and civilization material, as well as oral work.

41.16.3 COURSE DESCRIPTIONS

FRENCH N-201 (201)
Beginners' French (Language I)

This course is designed for students who lack any previous training in French or who otherwise

FRANÇAIS, N-429 (429)
La littérature française de 1857 à 1914
Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321, ou inscription au majeur en traduction. L'éclatement du romantisme; le triomphe de la philosophie positive; le Réalisme; la revanche de l'esthétisme, de l'irrationnel: l'art pour l'art, le Symbolisme. La poésie: Baudelaire, le Symbolisme. Le roman: Flaubert, Zola. (6 crédits)

FRANÇAIS N-431 (431)
Le roman québécois contemporain
Préalable: Français N-331. Etude des romanciers les plus importants du Québec: Aquin, Bessette, Blais, Ducharme, Hébert, Langevin, Roy; leur vision du monde; leur manière de se rattacher aux courants littéraires de notre époque; leurs conceptions littéraires. (6 crédits)

FRANÇAIS N-432 (432)
La poésie québécoise contemporaine
Préalable: Français N-331. Etude des poètes les plus importants du Québec. Chamberland, Duguay, Hébert, Giguère, Godin, Grandbois, Lasnier, Miron, Nelligan, Saint-Denys Garneau; leurs thèmes; leur vision du monde. (6 crédits)

FRANÇAIS N-440 (440)
Terminologie
Prealable: Français N-214 Introduction aux problèmes lexicographiques. Le cours identifie les problèmes rencontrés dans la traduction et comprend des travaux pratiques, tels qu'analyse lexicographique d'articles de journaux ou de revues, et la préparation de glossaires sur fiches.
(3 crédits)

FRANÇAIS N-441 (441)
Méthodologie
Préalable: Français N-214. Le cours porte sur les problèmes de traduction relevant des niveaux de langue. Des conférences initient les étudiants aux problèmes des stylistiques anglaise et française posés par la rédaction de textes particuliers: procès verbaux, rapports administratifs. (3 crédits)

FRANÇAIS N-442 (442)
Adaptation publicitaire et traduction commerciale
Préalable: Français N-214. Le cours initie les étudiants aux problèmes d'adaptation de textes publicitaires d'une langue à l'autre. A partir d'exemples empruntés à la publicité écrite, radiophonique ou télévisée, les étudiants seront amenés à se familiariser avec les modifications linguistiques, affectives et sociales inhérentes au travail d'adaptation. (3 crédits)

FRANÇAIS N-443 (443)
Histoire de la traduction
Préalable: Français N-214. Etude de textes et de traductions d'auteurs français et anglais. On étudiera l'évolution des styles et des attitudes, de la Renaissance jusqu'à l'époque moderne.
(3 crédits)

FRANÇAIS N-461 (461)
Le cinéma français
Préalable: Français N-211 ou l'autorisation du département. Aucun préalable n'est exigé des étudiants qui ont fait leurs études secondaires en français. Ce cours, abondamment illustré de films ou d'extraits de films, retrace en tout ou en partie, l'histoire du septième art dans ses manifestations les plus originales et les plus caractéristiques.
(6 crédits)
NOTE C/See § 200.1

FRANÇAIS N-462 (462)
Le théâtre français
Préalable: Français N-321 ou Français N-214 et Français N-241 ou l'autorisation du département. Ce cours étudie l'histoire du théâtre en France depuis le drame liturgique du moyen âge jusqu'à l'anti-théâtre du XXème siècle; textes et aspects scéniques ne sont pas dissociés.
(6 crédits)

FRANÇAIS N-463 (463)
Le cinéma français
Préalable: L'autorisation du département. Tout étudiant s'inscrivant pour la seconde fois au cours de cinéma N-461 obtient les crédits N-463.
(6 crédits)

FRANÇAIS N-465 (465)
Théâtre québécois
Préalable: Français N-331. Etude du théâtre québécois à partir de 1945. Analyse des pièces les plus importantes pour en dégager les lignes de force et établir leurs relations avec le contexte social du Québec contemporain. (3 crédits)

FRANÇAIS N-466 (466)
Etude d'un sujet spécial dans le domaine québécois.
Préalable: Français 331. Le cours porte sur un sujet spécial dans le domaine de la langue et de la littérature québecoises; les sujets seront, par exemple: les périodiques littéraires en français au Québec de 1950 à nos jours, l'Ecole littéraire de Montréal, les contes et nouvelles dans la littérature québécoise, la critique littéraire au Québec, et la littérature canadienne comparée. La matière du cours sera à fixer chaque fois selon les besoins et possibilités du département. (3 crédits)

FRANÇAIS N-467 (467)
Etude d'un sujet particulier
Préalable: 6 crédits et autorisation du département. Etude d'un sujet particulier dans le domaine de la langue ou de la littérature d'expression française. (3 crédits)

FRANÇAIS N-491 (451)
Etude avancée d'un sujet particulier
Préalable: Français N-321, douze crédits en littérature française dont six au moins au niveau '400', ou l'autorisation du département. Ce cours n'est ouvert qu'aux étudiants des programmes *major* ou *honours*. Il offre l'occasion d'approfondir l'étude d'un sujet à déterminer par l'étudiant en accord avec son conseiller et/ou un professeur du département. Chaque étudiant exécute des travaux individuels sous le contrôle du professeur spécialiste de la matière. (6 crédits)
NOTE C/See § 200.1

FRANÇAIS N-492
Etude avancée d'un sujet particulier
Préalable: Français N-491 et l'autorisation du département. Tout étudiant s'inscrivant pour la seconde fois au cours N-491 obtient les crédits N-492. (6 crédits)

problèmes théoriques de l'enseignement du français, langue seconde. Le mécanisme de l'interférence dans les domaines de la phonétique, de la morphologie et de la syntaxe est étudié ainsi que les questions d'ordre psychologique telles que la motivation et les ''lois'' de l'apprentissage. Le deuxième semestre est réservé à l'examen de diverses méthodes avec démonstrations, classes modèles, etc. (6 crédits)

FRANÇAIS N-410 (410)
Composition avancée (II) et stylistique

Préalable: Français N-310. Le cours se divise en trois parties: l'analyse stylistique proprement dite (définitions et procédés du style); une étude des grands genres littéraires et de leur évolution: des exercices commentés et critiqués de ''creative writing''. Selon leurs rapports, ces trois aspects du cours seront examinés parallèlement. (6 crédits)

FRANÇAIS N-415 (415)
Traduction avancée

Préalable: Français N-314 ou autorisation du département. Analyse approfondie de procédés stylistiques du français et de l'anglais. Étude des problèmes posés par les niveaux de langue et l'expression individuelle des auteurs. Travaux personnels et recherches en groupes. (6 crédits)

FRANÇAIS N-417 (417)
Linguistique structurale du français contemporain

Préalable: Français N-310 ou l'autorisation du département. Analyse descriptive de la structure linguistique du français contemporain. Étude des aspects phonémiques, morphosyntaxiques et lexicaux de la langue considérés comme un système. Applications théoriques et pratiques. (6 crédits)

FRANÇAIS N-418 (418)
Phonétique expérimentale

Préalable: Français N-313. Séminaire de recherche expérimentale. Initiation à l'utilisation des instruments de recherche. Étude détaillée de segments linguistiques du point de vue du timbre des voyelles, de l'articulation des consonnes et des faits prosodiques (accent, rythme, intonation). Étude expérimentale de problèmes relevant de la comparaison des systèmes phonétiques du français et de l'anglais. (3 crédits)

FRANÇAIS N-419 (419)
La langue française au Québec: son histoire et son état actuel

Préalable: Français N-331; cours à suivre préalablement ou concurremment: Français N-417. Aperçus de l'évolution du français sur le territoire québécois. Influences internes et externes. Étude des rapports entre l'évolution politique et économique du Québec et celle de la langue par la consultation de documents provenant d'époques successives. Cette étude conduit à une analyse des aspects phonétique, lexical, et morphosyntaxique du français québécois actuel et des divergences de ce dernier par rapport à la norme européenne: archaismes, anglicismes, créations nouvelles. La question des niveaux, la langue (aspects sociaux et linguistiques) et celle de la norme seront également abordées. (6 crédits)

FRANÇAIS N-420 (420)
Littérature française du moyen âge

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Ce cours se propose de présenter à l'étudiant et de lui faire apprécier les richesses littéraires du moyen âge français, du Serment de Strasbourg aux poèmes de François Villon. (6 crédits)

FRANÇAIS N-421 (421)
Littérature française de la Renaissance

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Étude des conditions de la Renaissance française (temps et lieux; forces en jeu; transmissions et contacts). Trois écrivains sont approfondis en raison de leur place et de leur rôle dans l'actualité de leur siècle et de leur importance spécifique: le conteur (Rabelais), le poète (Ronsard), le moraliste (Montaigne). La mythologie et le baroque sont étudiés comme signes de deux ''renaissances'' différentes, voire concurrentes. (6 crédits)

FRANÇAIS N-422 (422)
Le XVIIème siècle

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Cette étude du XVIIème siècle comporte une introduction historique et l'analyse des idées héritées des siècles précédents et de celles qui apparaissent et se développent au cours du XVIIème siècle. Les différents genres littéraires sont ensuite envisagés successivement: le théâtre, le roman, la poésie lyrique, les essais. (6 crédits)

FRANÇAIS N-423 (423)
Littérature française du XVIIIème siècle

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Après une introduction détaillés sur les modifications que subit la vie littéraire après le ''Siècle de Louis XIV'' ce cours tend d'abord à préciser les concepts-clefs du XVIIIème siècle pour établir les supports historiques et philosophiques de la période. Les écrivains importants, de Prévost à Rousseau, sont ensuite étudiés dans l'ordre chronologique. (6 crédits)

FRANÇAIS N-424 (424)
La littérature du XXème siècle I

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Ce cours débute par une analyse sommaire des facteurs historiques, économiques, sociaux et artistiques qui ont caractérisé la ''Belle Époque''; distingue, pendant cette période, la littérature en vogue de celle qui préparait le renouveau littéraire de l'entre-deux-guerres; analyse particulièrement l'oeuvre de Péguy, Claudel, Proust, Gide et Apollinaire. Après un bref aperçu sur la guerre de 1914-1918 et ses conséquences, il se termine par une étude des mouvements dadaïste et surréaliste. (6 crédits)

FRANÇAIS N-426 (426)
La littérature du XXème siècle II

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Après une brève analyse des conséquences de la première guerre mondiale sur le plan social, politique et artistique, sont étudiées par genre (roman et théâtre) les oeuvres des principaux écrivains français, de 1920 à nos jours. Sont particulièrement étudiés Bernanos, Malraux, St-Exupéry, Camus, Anouilh, Montherlant, Sartre, Giraudoux, Ionesco et Robbe-Grillet. (6 crédits)

FRANÇAIS N-427 (427)
Le Romantisme

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. Le cours étudie le mouvement romantique européen et son expression française. Il aborde les questions suivantes: Pourquoi le mouvement apparaît-il en France une génération plus tard qu'en Allemagne et en Angleterre? La révolution française est-elle classique ou romantique? Les Romantiques sont-ils conservateurs ou révolutionnaires? Les caractères, thèmes, limites et réussites propres au Romantisme français sont étudiés dans les oeuvres de Chateaubriand, Lamartine, Vigny, Hugo et Musset. (3 crédits)

FRANÇAIS N-428 (428)
Le roman à l'époque romantique

Préalable: Deux cours parmi les suivants: Français N-214, N-241, N-310, N-314, N-321. On étudiera dans trois romans écrits autour de 1830 l'invention et le développement des techniques réalistes propres à exposer les problèmes éthiques, politiques et sociaux d'une société en train de devenir la société industrielle contemporaine. (3 crédits)

41.18 Department of Philosophy

Professor and Chairman of the Department
DALLAS LASKY

Professors
STANLEY FRENCH
PAUL GERMAIN

Associate Professors
MORIN AHMAD
ROGER ANGEL
VLADIMIR ZEMAN

Assistant Professors
CHRISTINE GARSIDE
SHEILA MULLETT
JACK ORNSTEIN

41.18.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60 BA Honours in Philosophy

Year I
6 Phil N-211[6]
6 Phil N-210[6], N-221[6], N-231[6], N-273[6]

Year II
6 Phil N-221[6], N-321[6]
6 Phil N-380[6]
6 Phil N-301[6], N-401[6], N-403[6]
6 Phil electives

Year III
6 Phil N-405[6]
6 Phil N-369[6], N-421[6]
6 Phil N-407[6], N-409[6], N-431[6]
6 Phil electives at '300' or '400' level

**Student preparing for graduate work should acquire a good reading knowledge of a related modern language.*

72 BA Honours in Education and Philosophy

Year I
9 Ed N-210[6], N-230[3]
12 Phil N-210[6] or N-211[6]; Phil N-221[6] or N-231[6]

Year II
6 Ed N-430[6]
6 Phil N-380[6]
6 Ed N-421[6], N-441[6], N-451[6]
6 Phil N-231[6], N-368[3], N-378[3], N-431[6]

Year II
6 Ed N-480[6]
6 Phil electives at '400' level (excluding Phil N-493, N-495)
3-6 Ed N-490[3], N-491[3], N-492[3], N-493[3]
6 Phil N-369[6]

Year II or III
3-6 Ed N-415[3], N-416[3], N-417[3]

72 BA Honours in English and Philosophy

18 Engl N-333[6], N-334[6], N-335[6], N-336[6], N-337[6], N-374[6], N-375[6], N-487[6]
18 Engl N-231[3], N-232[3], N-244[6], N-344[6], N-348[6], N-351[6], N-353[6], N-356[6], N-363[6], N-367[6], N-376[6], N-430[6], N-448[3], N-456[3], N-459[6], N-460[6], N-466[6], N-476[6]
6 Phil N-210[6], N-211[6] or, if exempted, Phil elective
6 Phil N-380[6]
6 Phil N-211[6], N-321[6], N-369[6]
6 Phil N-231[6], N-271[6], N-273[6], N-301[6], N-361[6], N-369[6], N-372[3], N-374[3], N-376[3], N-378[3]
6 Phil N-369[6], N-405[6]
6 Phil N-321[6], N-365[6], N-396[3], N-401[6], N-403[6], N-405[6], N-407[6], N-431[6], N-493[6]; Int St N-241[3], N-242[3]

41.17 Mathematics (Faculty of Science)

For additional programmes of study and courses in Mathematics please consult the Sir George Williams Faculty of Science § 91.9.4

MATHEMATICS N-200
Fundamental Concepts of Algebra

This is a course designed for mature students who need a modern background for Mathematics 101. Sets, axiomatics, algebraic techniques, inequalities, analytic geometry of lines, circles, parabolas. (3 credits)

MATHEMATICS N-201
Elementary Functions

Sets. Field of real numbers. Inequalities. Functions and graphs. Trigonometric, exponential and logarithmic functions. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-202
College Algebra

Prerequisite: Mathematics N-201 or equivalent previously or concurrently. Proofs and implications. The Natural numbers and the integers. Mathematical induction. Divisibility, the Euclidean Algorithm, primes, the Fundamental Theorem of Arithmetic. Sequences and progressions. Complex numbers, polynomials, the Fundamental Theorem of Algebra. Combinatorial Mathematics, the Binomial Theorem. Systems of equations, determinants, Cramers' Rule. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-203
Differential and Integral Calculus I

Prerequisite: mathematics N-201 or equivalent. Functional notation. Limits and continuity. Differentiation of polynomials. The power, product, quotient and chain rules. Implicit differentiation. Higher derivatives. Mean Value Theorem. Rolles Theorem. Maxima and Minima. Applications; tangents to plane curves, related rates. The differential use in finding approximations. Indefinite and definite integrals areas and volumes. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-204
Vector Analysis and Analytical Geometry

Prerequisite: Mathematics N-201 or equivalent. Inner and cross products of vectors. Algebraic and vector equations of curves int the plane and in space. Elementary study of surfaces in space. Curves and surfaces in parametric form. Polar, spherical and cylindrical coordinates. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-205
Differential and Integral Calculus II

Prerequisite: mathematics N-203. Differentiation and integrationof trigonometric functions. Derivatives of inverse trigonometric functions, logarithmic functions and exponential functions. Methods of integration by parts, by substitution, by separation into partial fractions. Improper integrals, L'Hopitals' Theorem. Series: convergency tests. Maclaurin and Taylor Theorems. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-206
Linear Algebra for the Social Sciences

Prerequisite: Mathematics N-202. Operations on Matrices. Determinants, Cramers' Rule. Systems, rank. The inverse matrix. The Gauss Jordan Method, Mappings, matrix transformation, Linear Transformations, Characteristic Values, vectors, quadratic forms. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-207
Statistics for the Social Sciences

Prerequisite: Mathematics N-201 or equivalent, or permission of Departments of Mathematics or Economics. Elementary probability, permutations and combinations, binomial and normal distribution. Analysis and organization of statistical data. Tests of hypotheses. Confidence limits. Introduction into linear regression and correlation. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-208
Fundamental Mathematics I

Prerequisite: Mathematics N-201 or equivalent. This course is intended primarily for pre-Commerce students. Progressions, compound interest, annuities; permutations, combinations and binomial theorem; systems of linear equations, inequalities, linear programming; matrices. (3 credits)
NOTE A/See § 200.4

MATHEMATICS N-209
Fundamental Mathematics II

Prerequisite: Mathematics N-201 or equivalent. This course is intended primarily for pre-Commerce students. Limits, differentiation of rational, exponential and logarithmic functions, theory of maxima and minima, integration. (3 credits)
NOTE A/See § 200.4

The following courses are available only to practicing teachers.

Mathematics N-300[6], N-301[6], N-302[6], N-303[6], N-304[6], N-305[6], N-307[3], N-309[3], N-400[3], N-401[6], N-402[3], N-403[3], N-404[6], N-405[3], N-406[3], N-408[3]

Descriptions of the above courses are listed in the Sir George Williams Faculty of Science § 91.9.4

NOTE: Certificate programmes in Mathematics for Elementary Teachers and Junior Secondary Teachers are available for practicing teachers. The description of these programmes can be found in § 91.9.2 and § 91.9.3

PHILOSOPHY N-231 (241)
Problems of Morals
An introduction to theoretical and applied ethics. In this course, attention will be given to the history of ethical thought and to discussion of contemporary problems. (6 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-271 (271)
Contemporary Philosophy
Prerequisite: Second year standing. A selected study of selected 20th century philosophers. Movements and figures discussed vary from year to year. Specimen topics include pragmatism, positivism, existentialism, linguistic analysis, phenomenology, structuralism: Russell, Moore, Whitehead, Dewey, Wittgenstein, Husserl, Heidegger, Jaspers. (6 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-273 (273)
Existentialism
A course designed to acquaint the student with the fundamentals of the existentialist movement as a philosophical perspective. Among philosophers considered will be Kierkegaard, Neitzsche, Heidegger, Sartre, Merleau-Ponty, Jaspers, Marcel and Berdyaev. (6 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-301 (422)
Greek Philosophy
A survey of the principal developments from the Presocratics (600 B.C.) to Plotinus (250 A.D.). Primary emphasis will be placed on the critical reading of selected original sources. The majority of time will be devoted to Plato and Aristotle. (6 credits)

PHILOSOPHY N-321 (454)
Modern Logic
An introduction to modern logic, its techniques and applications. Coverage of sentential logic, first order predicate logic, naive set theory, relations and functions (6 credits)

PHILOSOPHY N-361 (261)
Philosophical Ideas in Literature
Prerequisite: Second year standing or permission of the instructor. A critical examination of philosophical ideas as expressed in various literary works. The subject matter is chosen for its relevance to such themes as the nature of man, the nature of the good life, and the relation of man to society. (6 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-365 (465)
Studies in Russian Philosophy
Prequisite: Second year standing or permission of the Department. Study of the main topics in the development of Russian philosophy. Topics to be discussed include: Nihilism and Anarchism, Tolstoy's Philosophy of History, Dostoyevsky's idea of evil, Marxism. Lectures and seminars. (6 credits)

PHILOSOPHY N-368 (468)
Philosophical Psychology
A critical examination of the explanation of human behaviour and the self in the light of new developments in philosophy and psychology. Detailed studies of selected problems such as motives, intention, the concept of person, choice, reason, freedom, purpose and action. (3 credits)

PHILOSOPHY N-369 (413)
Contemporary Analytic Philosophy
Prerequisite: Twelve credits in philosophy or permission of Department. A seminar devoted to the investigation of selected philosophical problems as they arise in the writings of such philosophers as Moore, Russell, Ayer, Carnap, Quine, Wittgenstein, Ryle, Wisdom, Austin and others. (6 credits)

PHILOSOPHY N-372 (431)
Political Philosophy
Prerequisite: Second year standing or permission of the Department. Critical analysis of contemporary political-philosophical concepts such as tolerance, violence, séparatisme, racism and the nationalism of visible minorities. (3 credits)

PHILOSOPHY N-374 (432)
Philosophy of Law
Prerequisite: Second year standing or permission of the department. A critical analysis of current and classical legal philosophy. Such schools as the following are examined: naturalism, positivism, legal realism. (3 credits)

PHILOSOPHY N-376 (435)
Philosophy of the Social Sciences
Philosophical examination of the structure and methodology of the social sciences. Special attention to problems of functionalism, teleoligical explanation and the testing of social theories. (3 credits)

PHILOSOPHY N-378 (436)
Aesthetics
Prerequisite: Second year standing or permission of the department. A philosophical analysis of selected aspects of the aesthetic experience and the logic of appraisal. Specimen topics include: perception in art, symbolic expression, the role of feeling and emotion in aesthetic judgment, objectivity and subjectivity of value judgments, commesurability of values. (3 credits)

PHILOSOPHY N-380 (401)
Honours Seminar in Epistemology and Metaphysics
Prerequisite: Second year standing. Intensive study of major contemporary issues in the theory of knowledge and metaphysics, designed to accomodate honours students in any department. (6 credits)

PHILOSOPHY N-398 (472)
The Study of a Given Thinker
Prerequisite: Six credits in Philosophy or permission of the Department. A detailed study of one or more of the central works of a major philosopher. When it is appropriate, some attention may be devoted to his philosophical development. (3 credits) *NOTE C/See § 200.1*

PHILOSOPHY N-398 (472)
The Study of A Given Thinker
Prerequisite: Six credits in Philosophy or permission of the Department. A student repeating N-396 for a second time registers under Philosophy N-398. (3 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-401 (421)
British Empiricism
Prerequisite: Six credits in Philosophy or permission of the Department. An intensive study of at least two of Locke, Berkeley and Hume. (6 credits)

PHILOSOPHY N-403 (423)
Continental Rationalism
Prerequisite: Six credits in Philosophy or permission of the Department. An intensive study of at least two of Descartes, Spinoza and Leibniz. (6 credits)

PHILOSOPHY N-405 (424)
Kant
Prerequisite: Twelve credits in Philosophy or permission of the Department. An intensive study of Kant's *Critique of Pure Reason* and related works. (6 credits)

PHILOSOPHY N-407 (407)
Nineteenth Century Philosophy
Prerequisite: Six credits in Philosophy or permission of the Department. An examination of some of the main currents of post-Kantian philosophy, Hegel and the post-Hegelians, the romantic reaction, positivism, and pragmatism. (6 credits)

PHILOSOPHY N-409 (409)
Phenomenology
Prerequisites: Twelve credits in Philosophy or permission of the Department. Origins and development of phenomenology from Brentano and

66 BA Honours in Philosophy and History

Year I
6 Hist N-210[6]
6 Phil N-211[6]

Year II
6 Hist N-390[6]
12* Hist N-333[6], N-335[6], N-336[6]
6 Phil N-380[6]
6 Phil N-301[6], N-401[6], N-403[6]

Year III
6 Hist N-490[6]
6 Phil N-405[6], N-407[6]
6 Hist electives at '400' level (in consultation with departmental honours advisor.)
6 Phil electives at '300' or '400' level (in consultation with departmental honours advisor)

**Six of these credits may be taken in Year III.*

72 BA Honours in Sociology and Philosophy

Pattern B (Man in Society)
6 Soc N-210[6] or, if exempted, Soc elective
6 Anth N-211[6] or, if exempted, Anth elective
12 Soc N-420[6], N-481[6]
6 Soc N-421[6], N-422[6]; Anth N-423[6]
6 Soc N-442[6], N-443[6], N-444[3], N-445[3], N-446[6], N-447[6], N-454[6]
6 Phil N-210[6], N-211[6] or, if exempted, Phil elective
6 Phil N-380[6]
6 Phil N-221[6], N-321[6], N-369[6]
6 Phil N-372[3], N-374[3], N-376[3], N-378[3]
12 Phil electives

30 Minor in Philosophy

12 Phil N-210[6], N-211[6], N-221[6], N-321[6], N-369[6], N-405[6]
18 Phil N-301[6], N-321[6], N-369[6], N-396[6], N-401[3], N-403[6], N-405[6], N-407[6], N-431[6], N-493[3], N-495[6]

72 BA Honours in Philosophy and Religion

12 Rel N-211[6], N-213[6], N-301[3], N-302[3]
6 Rel N-443[6]
6 Rel N-363[6], N-364[6]
6 Rel N-361[6], N-362[6], N-465[6]
6 Rel N-311[6], N-312[6], N-313[6], N-326[3], N-327[3], N-328[3], N-491[6], N-492[6]
6 Phil N-210[6] or, if exempted, Phil elective
6 Phil N-380[6]
6 Phil N-221[6], N-321[6], N-369[6]
6 Phil N-369[6], N-405[6]
6 Phil N-231[6], N-271[6], N-273[6], N-301[6], N-361[6], N-365[6], N-369[6], N-372[3], N-374[3], N-376[3], N-378[3]
6 Phil N-321[6], N-365[6], N-396[3], N-401[6], N-403[6], N-405[6], N-407[6], N-431[6], N-493[6]

42 BA Major in Philosophy

Year I
6 Phil N-210[6], N-211[6]
6 Phil N-221[6], N-231[6], N-273[6]

Year II
6 Phil N-301[6] or N-401[6] or N-403[6]
6 Phil Electives at '300' or '400' level
6 Phil electives

Year III
6 Phil N-369[6], N-405[6], N-409[6]
6 Phil electives at '300' or '400' level

69 BA Honours in Sociology and Philosophy

Pattern A (Epistemology and Methodology)
6 Soc N-210[6] or, if exempted, Soc electives
6 Soc N-241[6], N-301[3], N-302[3]
12 Soc N-411[6], N-481[6]
6 Soc N-420[6], N-430[6], N-431[6]
6 Soc N-422[6], N-494[6]
6 Phil N-210[6], N-211[6], N-221[6] or, if exempted, Phil elective
6 Phil N-380[6]
6 Phil N-221[6], N-321[6]
6 Phil N-369[6], N-405[6]
3 Phil N-372[3], N-374[3], N-376[3]
6 Phil N-321[6], N-369[6], N-401[3], N-405[6], N-421[6], N-493[6]

48 BA Major Political Philosophy

18 Pol Sc N-311[6], N-320[6], N-413[6]
6 Phil N-210[6], N-211[6]
24 Phil N-369[6], N-372[3], N-374[3], N-376[3], N-401[6], N-407[6]; Pol Sc N-415[6]; Soc N-430[6]

41.18.2 COURSE DESCRIPTIONS

PHILOSOPHY N-210 (211)
Problems of Philosophy

A survey of selected philosophical problems in which both contemporary and traditional approaches are critically examined. Specimen topics include: philosophical method, the existence of God, the mind-body problem, freedom and determinism, moral and political obligation. (6 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-211 (212)
Philosophical Classics

A critical discussion of selected philosophical classics. Readings will be chosen from Plato, Aristotle, Descartes, Hume, Kant and one recent or contemporary philosopher. (6 credits) *NOTE A/See § 200.1*

PHILOSOPHY N-214
Philosophical Classics I

Students entering the university in January may join Philosophy N-211 at that time by registering in Philosophy N-214. Tutorials and conferences will be arranged. Such students may complete the equivalent of Philosophy N-211 by enrolling in Philosophy N-215. (3 credits).

PHILOSOPHY N-215
Philosophical Classics II

Prerequisite: Philosophy N-214. The subject matter in this course is the same as that taught in the first semester of Philosophy N-211. Students with credits for Philosophy N-214 may complete the equivalent of Philosophy N-211 by enrolling in Philosophy N-215. (3 credits)

PHILOSOPHY N-221 (253)
Introduction to Logic

This course introduces the student to the nature and function of formal logic through an examination of both syllogistic logic and immediate inference. In addition there will be an extensive treatment of informal or material fallacies and an elementary presentation of propositional logic. (6 credits) *NOTE A/SEE § 200.1*

41.19 Department of Religion

Professor and Chairman of the Department
CHARLES DAVIS

Professor
MICHEL DESPLAND

Associate Professors
SHEILA McDONOUGH
DAVID MILLER
JOHN ROSSNER

Assistant Professors
FREDERICK B. BIRD
EHUD LUZ
MICHAEL OPPENHEIM
ALTI RODAL

41.19.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60 BA Honours in Religion

12	Rel N-211[6], N-213[6]
12	From one of three areas of specialization:
	A. Asian religions: Rel N-311[6], N-312[6], N-313[6]
	B. Christianity: Rel N-301[3], N-302[3], N-361[6], N-362[6], N-363[6]
	C. Judaism: Rel N-301[3], N-302[3], N-325[3], N-326[3], N-327[3], N-328[3], N-329[3], N-350[3]
6	Electives from courses specified in a second area above
6	Rel N-331[3], N-332[3], N-333[3], N-334[3], N-341[6], N-364[6], N-435[6], N-443[6], N-465[6]
6	Electives in chosen area of specialization at '400' level
6	Rel electives at '300' or '400' level
12	Electives in Rel or related discipline (in consultation with Departmental Honours Advisor)

60 BA Honours in English and Religion

12	Engl N-333[6], N-430[6]
6	Engl N-375[6] or N-376[6]
12	Engl N-244[6], N-334[6], N-335[6], N-336[6], N-337[6], N-348[6], N-374[6], N-375[6] or N-376[6]
12	Rel N-301[3], N-302[3], N-341[6]
6	Rel N-211[6], N-213[6], N-361[6], N-362[6], N-363[6]
6	Rel N-443[6], N-465[6]
6	Rel N-311[6], N-312[6], N-313[6], N-325[3], N-326[3], N-327[3], N-328[3], N-330[3], N-361[6]

66 BA Honours in Religion and History

Pattern A (Asia)

30	Hist N-210[6], N-261[6], N-361[6], N-362[6], N-390[6]
24	Rel N-213[6], N-311[6], N-312[6], N-313[6]
12	Soc* N-210[6], N-424[6]

NOTE: (a) With the approval of the honours representative, any 6 credits at '400' level in Hist or Rel may be substituted for any specific course.

(b) For students interested in the comparative aspects of Islamic development, Hist N-365[6] is available.

Pattern B (Europe)

12	Hist N-210[6], N-390[6]
6	Rel N-211[6], N-213[6]
42	Hist N-331[6], N-332[6], N-333[6], N-336[6], N-327[3], N-328[3], N-330[3]; Rel N-361[6], N-362[6], N-443[6]; Soc* N-210[6], N-424[6]

**Students taking Soc N-210 in honours programme must also take Soc N-424*

Meinong through the different stages of Husserl's writing. Post-Husserlian modifications will be considered briefly. The second term will be devoted to a discussion in the influence of the phenomenological movement on contemporary developments in the social sciences and humanities. Actual topics will be determined by the students' areas of interest and academic qualifications. (6 credits)

PHILOSOPHY N-421 (452)
The Philosophy of Science

Prerequisite: One course in logic or permission of the Department. A critical examination of problems pertaining to the structure and status of scientific theories and the logic of scientific inference. Such topics as the following will be discussed: explanation, confirmation, verifiability and falsifiability, problems of definition, observational and thoretical terms, models and analogies. (6 credits)

PHILOSOPHY N-431 (441)
Recent Ethical Theory

Prerequisite: Six credits in Philosophy or permission of the Department. A critical analysis of leading contemporary ethical theories from Moore to the present. Special attention is given to the naturalistic fallacy, the reducibility of normative statements, ethical reasoning and the relation of ethics to psychology and sociology. (6 credits)

PHILOSOPHY N-493 (491)
Special Topics in Philosophy

Prerequisite: Six credits in Philosophy or permission of the Department. Consideration of a special topic selected from the principal areas of philosophy, e.g. value theory, epistemology, metaphysics, philosophy of mind, philosophy of science, philosophical logic. (6 credits) *NOTE C/See § 200.1*

PHILOSOPHY N-495 (492)
Special Topics in Philosophy

Prerequisites: Twelve credits in Philosophy or permission of the Department. A student repeating Philosophy N-493 a second time registers for credits under Philosophy N-495. (6 credits)

religion and culture, with special attention to mysticism and to modernism. (6 credits) *NOTE A/See § 200.1*

RELIGION N-325 (425)
The Bible and the Ancient Near East

The significance of Old Testament Institutions within the context of the ancient Mediterranean world. Law, covenant, writing, historiography, the relationship between man and God, sin, sacrifice and atonements will be discussed. Readings from contemporary literature in translation (Babylonian, Egyptian, Greek, Hittite, Ugarite). (3 credits) *NOTE A/See § 200.1*

RELIGION N-326 (426)
Talmudic Judaism

The concepts and institutions of classical or 'normative' Judaism, in the setting of the Hellenistic-Roman world. A conceptual approach to law, ethics, philosophy and culture of post-Biblical Judaism. Consideration will be given to sectarianism and sectarian movements (Samaritans, Dead Sea Scrolls) and their relationship to the major Jewish 'Schools' (Pharisees, Sadducees, Essenes) and to the early Christian Church. (3 credits) *NOTE A/See § 200.1*

RELIGION N-327 (427)
Mediaeval Jewish Thought and Institutions

Topics in the intellectual, religious, and social history of selected Jewish communities during the Middle Ages. Both internal Jewish developments and changing Jewish relations with their non-Jewish neighbours will be considered. (3 credits) *NOTE A/See § 200.1*

RELIGION N-328 (428)
Modern Jewish Thought and Institutions I (1780-1880)

A survey of the social and intellectual currents which have shaped Jewish modernism from the beginning of emancipation until 1880. Topics will include: the emergence of modern Jewish consciousness, Jewish pluralism and religious differentiation within Jewish society (Haskalah, Hasidism, science of Judaism, orthodoxy, reform and conservatism), secular versus religious values, disintegration and unification within the Jewish community. (3 credits) *NOTE A/See § 200.1*

RELIGION N-329 (329)
Sefardic Judaism

A critical analysis of the religious traditions peculiar to Sefardic Jews. Particular attention will be given to North African Judaism. (3 credits)

RELIGION N-330 (330)
Modern Jewish Thought and Institutions II (1880-to the present)

A survey of social and intellectual currents in Jewish society from 1880 until the present. Topics will include: the impact of anti-Semitism, particularism and universalism, nationalism and its critics, Jewish existentialism and the new mysticism (Rosenzweig, Buber, Rabbi Kook), reactions to the holocaust, and the relationship between Israel and the diaspora. (3 credits)

RELIGION N-331 (331)
Contemporary Ethical Issues: Personal

This course will identify and analyse ethical issues arising at the personal level today. Issues will be discussed in the context of the interrelationship between moral values and religious convictions. Topics will vary from year to year, but some examples of areas that raise ethical and religious questions for personal existence are: affluence, alienation, work, leisure, aging, drugs. (3 credits)

RELIGION N-332 (132, 332)
Contemporary Ethical Issues: Societal

This course will identify and analyze ethical issues arising from social groups today. In discussing the issues, account will be taken of the bearing of religious institutions and traditions upon social attitudes and problems. Topics will vary from year to year, but examples of problem areas that have evoked ethical and religious debate are: economic and social inequality, race relations, violence and war, hunger and poverty, population growth. (3 credits)

RELIGION N-333 (333)
Women and Religion I

An examination of the roles and images of women in the history of religions. Topics might include: the development of patriarchal religion, religion and sexuality, women and myth, the roles of women in different religious communities. This course will include an integrated sequence of lectures (minimum three weeks) by an anthropologist on matriarchal and patriarchal societies. (3 credits)

RELIGION N-334 (334)
Women and Religion II

An examination of the religious and ethical questions raised by contemporary discussions of women's experience. Topics might include: the recent beginnings of a feminist theology, the feminist critique of organized religion and society, the effects of male perspective upon philosophy and theology and women in the ministry. (3 credits)

RELIGION N-341 (341)
Religion and Literature

This course deals with the questions raised for the study of religion by works of literature. An account will be given of the recent development of interdisciplinary studies in religion and literature and of the problems of method that have arisen. The relation between the interpretation of religious language, with its use of myth, parable, symbol and metaphor, and literary criticism will be explored. The religious implications, direct and indirect, of selected literary works will be discussed. (6 credits)

RELIGION N-361 (441)
Studies in the History of Christian Thought

An introduction to the classics of Christian thought from the Fathers to the modern period. Authors studied at length may vary from year to year, but in any case students will acquire a basic knowledge of Augustine, Aquinas, Luther and Calvin. (6 credits)

RELIGION N-362 (442)
Questions from the Christian Tradition

A study of some of the major religious questions and controversies in the history of the Christian West. The questions chosen will vary, but examples are: grace and free will, faith and reason, history and eschatology, church and state, contemplation and action. (6 credits)

RELIGION N-363 (463)
Religion in Canada

The historical development of the major religious traditions in Canada, their influence on the social, political and cultural areas of Canadian life and their contemporary significance. Attention will also focus on the inter-action of Catholic, Protestant, Jewish, Indian and Eskimo groups. (6 credits) *NOTE A/See § 200.1*

RELIGION N-364 (447)
The Origin of Myth, Ritual, Magic and Reason in Western Culture

A study of religion, myth, ritual, magic, science and technology in the ancient sacral-societies of Egypt and Mesopotamia. The emergence of religious and philosophical thought in classical Greece and the development of the Hebraic and early Christian forms of Monotheism. Toward the end of the course these themes will be related to subsequent developments in Western culture. (6 credits)

RELIGION N-401 (401)
Advanced Studies in Classical Jewish Texts

The course will be based on representative readings from Biblical, post-Biblical and mediaeval Hebrew literature. It will concentrate

72	BA Honours in Philosophy and Religion
12	Rel N-211[6], N-213[6], N-301[3], N-302[3]
6	Rel N-443[6]
6	Rel N-363[6], N-364[6]
6	Rel N-361[6], N-362[6], N-465[6]
6	Rel N-311[6], N-312[6], N-313[6], N-326[3], N-327[3], N-328[3], N-491[6], N-492[6]
6	Phil N-210[6], N-211[6] or, if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6], N-369[6]
6	Phil N-369[6], N-405[6]
6	Phil N-231[6], N-271[6], N-273[6], N-301[6], N-361[6], N-365[6], N-369[6], N-372[3], N-374[3], N-376[3], N-378[3]
6	Phil N-321[6], N-365[6], N-396[3], N-401[6], N-403[6], N-405[6], N-407[6], N-431[6], N-493[6]

60	BA Honours in Sociology and Religion
18	Anth N-211[6]; Rel N-213[6]; Soc N-210[6]
6	Rel N-301[3], N-302[3], N-363[6]
12	Rel N-311[6], N-312[6], N-313[6], N-326[3], N-327[3], N-328[3], N-330[3], N-361[6], N-362[6]
12	Rel N-491[6]; Soc N-430[6] or N-431[6]; Soc N-481[6]
6	Anth N-425[6]; Soc N-424[6], N-443[6], N-446[6], N-494[6]
6	Soc electives (in consultation with Department Honours Advisor)

Students preparing for graduate work should acquire a good reading knowledge of French, German, Greek, Hebrew or Latin.

42	BA Major in Religion
6	Rel N-211[6], N-213[6], N-311[6], N-312[6], N-313[6]
6	Rel N-301[3]N-302[3], N-326[3], N-327[3], N-328[3], N-329[3], N-330[3], N-361[6], N-362[6], N-363[6]
30	Rel electives at '300' or '400' level

48	BA Major in Judaic Studies
6	Rel N-201[6]
6	Rel N-211[6], N-213[6]
21	Rel N-301[3], N-325[3], N-326[3], N-327[3], N-328[3], N-329[3], N-330[3], N-401[3], N-497[3], N-498[3]
6	Rel N-361[6], N-362[6], N-313[6]
9	Electives in related disciplines at '300' or '400' level (in consultation with Major Advisor)

30	Minor in Religion
30	Rel electives (in consultation with Departmental Advisor)

30	Minor in Judaic Studies
6	Rel N-201[6]
18	Rel N-301[3], N-302[3], N-326[3], N-327[3], N-328[3], N-329[3], N-330[3]
6	Rel N-401[3], N-497[3], N-498[3] or electives at '400' level (in consultation with Major Advisor)

41.19.2 COURSE DESCRIPTIONS

RELIGION N-201 (201)
Classical Hebrew

A study of the language of the classical Hebrew texts. The course is designed as a preparation for reading the Hebrew Bible, but takes account of other texts. (6 credits) *NOTE A/See § 200.1*

RELIGION N-211 (211)
Understanding Religion

A systematic and topical introduction to the study of religion. The purpose of the course is to enable the student to articulate and investigate questions about the meaning and nature of religion. Problems discussed will include the elements of religious experience, forms of religious expression and interpretation, religious communities and practices and the questions raised by the contemporary interfaith dialogue. Materials will be taken from a variety of religious traditions. (6 credits)

RELIGION N-213 (213)
Major Religious Traditions of the World

A historical and comparative overview of the major religious traditions of the world: Judaism, Christianity, Islam, Hinduism, Buddhism and Chinese religions. The course will include some consideration of the new religions in North America. (6 credits)

RELIGION N-301 (251)
Biblical Studies I: The Hebrew Bible

An introduction to the methods and results of Biblical scholarship with regard to the history, culture and religion of Ancient Israel. Particular attention is given to the major religious affirmations and theological concepts of the Hebrew Bible which have become central in the subsequent development of Judaism. (3 credits) *NOTE A/See § 200.1*

RELIGION N-302 (252)
Biblical Studies II: The New Testament

An introduction to the methods and results of contemporary New Testament scholarship; a critical survey of New Testament literature considering historical setting, history of text, religious and cultural significance. Attention is given to the central issues and concepts portrayed in the Synoptic, Johannine and Pauline writings and their importance in the subsequent development of the Western religious tradition. (3 credits) *NOTE A/See § 200.1*

RELIGION N-311 (411)
The Religions of India, Ceylon, Southeast Asia

An historical study of the major religious traditions native to the Indian sub-continent, Ceylon and Southeast Asia. Although the course will concentrate upon the development of Hindu and Buddhist religious thought and institutions, consideration will be given to the influence of Jainism, Islam and Christianity upon Hinduism and Theravada Buddhism. The course will end with an analysis of the contemporary religious situation in India and Burma. (6 credits) *NOTE A/See § 200.1*

RELIGION N-312 (412)
The Religions of China and Japan

Prerequisite: Second year standing. An historical study of the religious traditions of pre-modern China, Tibet and Japan. After a brief introduction to the origin of Buddhism in India, the course will focus upon the development of religious thought and institutions in Mahayana Buddhism, Taoism, Confucianism and Shinto. The course will end with an analysis of the contemporary religious situations in China and Japan. (6 credits) *NOTE A/See § 200.1*

RELIGION N-313 (413)
Islam

A study of the rise and development of Islamic

Social Sciences

on specific topics and will pay attention to the historical and philosophical background of the texts. (3 credits)

RELIGION N-435 (435)
Comparative Religious Ethics: West & East

This course will identify the ways in which different religious and ideological traditions from West and East consider and deal with ethical issues. Examples of such traditions are Navaho, Jewish, Christian, Islamic, Hindu, Buddhist, Confucian, Humanist, Communist. The ethical values and ideals found in these traditions and their influence upon individual life patterns and social organization will be considered. (6 credits)

RELIGION N-443 (443)
Modern Religious and Atheistic Thought

A historical and critical review of the conflicting philosophical interpretations of religion that have arisen in the West since the Enlightenment. Special attention will be paid to problems about the nature of meaning of religious experience currently debated between religious and secularist thinkers. (6 credits)

RELIGION N-465 (465)
Classical and Contemporary Images of Man

A seminar on the religious and cultural significance of some of the contemporary images of man reflected in: recent writings in philosophy, psychology, political and social theory and communications; developments in the arts and popular culture; the newer religious movements, including Western adaptations of Oriental religious cults; parapsychological research, psychic phenomena, the world of the occult and science-fiction literature. The ideas of selected authors and movements will be examined against the background of the classical Greek, ancient Hebrew and early Christian conceptions of man and the major religious themes and motifs of intellectual traditions of the West. (6 credits)

RELIGION N-491 (448)
Special Seminar I

Prerequisite: Permission of the Department. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (6 credits) *NOTE C/See § 200.1*

RELIGION N-492 (449)
Special Seminar II

Prerequisite: Permission of the Department. A student repeating Religion N-491 a second time registers for credits under Religion N-492. (6 credits)

RELIGION N-493 (493)
Religious Institutions

Prerequisite: Permission of the Department. Seminar on a particular period or institution in the history of religion. (3 credits) *NOTE C/See § 200.1*

RELIGION N-494
Religious Institutions

Prerequisite: Permission of the Department. A student repeating Religion N-493 a second time registers for credits under Religion N-494. (3 credits)

RELIGION N-495
Religious Thinkers

Prerequisite: Permission of the Department. Seminar on a particular thinker or school of thought in the history of religion. (3 credits) *NOTE C/See § 200.1*

RELIGION N-496
Religious Thinkers

Prerequisite: Permission of the Department. A student repeating Religion N-495 a second time registers for credits under Religion N-496. (3 credits)

RELIGION N-497 (497)
Topics in Jewish History

A study of a problem or area of concern in Jewish History. Possible topics might be: the nature of the Dead Sea Sect, the background of the expulsion of the Jews from Spain, Jewish reactions to catastrophe since 1492, Jewish nationalism in the twentieth century, Jewish messianic movements, history of the ancient Near East, history of the Jews in North America. (3 credits) *NOTE C/See § 200.1*

RELIGION N-498 (498)
Topics in Jewish History

Prerequisite: Permission of the Department. A student repeating Religion N-497 a second time registers for credits under Religion N-498. (3 credits)

These courses were given in the summer of 1974.

RELIGION N-493/1 (493/1)
Images of Women in Antiquity and the Jewish and Christian Traditions
RELIGION N-494/ (494/1)
The Changing Image of Women in Modern Ideologies

This course explores the uses of administrative process to support the goals of a community serving organization. A variety of administrative approaches and their applications to the development of an organization (school, hospital, agency) will be explored. Attention will be given to personnel development, planning and systems, and interactions with resource people associated with community organizations. (3 credits) *NOTE A/See § 200.1*

APPLIED SOCIAL SCIENCE N-431 (431)
Group Development and Supervision

Prerequisite: Applied Social Science N-212. Orientation to systematic group development in community - serving organizations. Development of understanding and skill in using group procedures to facilitate communication and decision-making in small groups, classes and committees. Focus on helping others improve their functioning with groups through supervision and training. Each student will study the development of an agency group throughout the year. (6 credits)

APPLIED SOCIAL SCIENCE N-441 (441)
Community Development

Prerequisite: Applied Social Science N-212. Orientation to systematic community problem solving dealing with communications, assessment of needs, decision-making, and intergroup relations, drawing on the contribution of the social sciences. (3 credits)

APPLIED SOCIAL SCIENCE N-451 (451)
Principles and Practices of Guidance

Prerequisite: Applied Social Science N-212. Principles and methods of counselling and guidance with particular reference to their application in the setting of the community-serving organizations. Organization and administration of a guidance service including measurement and appraisal, techniques of counselling, occupational and educational information, and referral, will be considered. (3 credits)

APPLIED SOCIAL SCIENCE N-452 (452)
Introduction to Counselling

Prerequisites: Applied Social Science N-212, N-451. A survey of typical problems, information, techniques, principles, policies and points of view useful to professional staff in community-serving organizations; focus on educational, vocational and relationship problems, and the use of counselling techniques in staff relations and supervision. (3 credits)

APPLIED SOCIAL SCIENCE N-461 (461)
Social Welfare and the Social Welfare Services

Prerequisite: Second-year standing or permission of the Department. A general course concerned with social welfare problems in modern society: some analysis of these problems in relation to economic and cultural patterns. A description of the functional settings in which social welfare services are practiced. A consideration of the methods used in social welfare, and some consideration of the connective links between social welfare services and religion, law, medicine, nursing, teaching and other professions. (6 credits) *NOTE A/See § 200.1*

APPLIED SOCIAL SCIENCE N-471 (471)
Special Projects Seminar

Prerequisites: Second year major in Applied Social Science and permission of the Department. A seminar course for field projects, surveys and research studies undertaken by each student. (6 credits) *NOTE C/See § 200.1*

APPLIED SOCIAL SCIENCE N-472 (472)
Special Projects Seminar

Prerequisite: Second year major in Applied Social Science and permission of the Department. A student repeating Applied Social Science N-471 for a second time registers for credits under Applied Social Science N-472. (6 credits)

APPLIED SOCIAL SCIENCE N-481 (481)
Special Seminar in Applied Social Science

Prerequisites: Psychology N-211, Sociology N-210 and permission of the Department. The subject for the seminar will vary from year to year reflecting recent developments in social change, new approaches in the behavioural sciences or the special interests of the instructor. (6 credits) *NOTE C/See § 200.1*

APPLIED SOCIAL SCIENCE N-482 (482)
Special Seminar in Applied Social Science

Prerequisite: Permission of the Department. A student repeating Applied Social Science N-481 a second time registers for credits under N-482. (6 credits)

APPLIED SOCIAL SCIENCE N-485 (485)
Special Seminar in Applied Social Science

Prerequisite: Permission of the Department. The subject for the seminar will vary from year to year reflecting recent developments in social change, new approaches in the behavioural sciences, or the special interests of students or the instructor. (3 credits) *NOTE C/See § 200.1*

APPLIED SOCIAL SCIENCE N-486 (486)
Special Seminar in Applied Social Science

Prerequisite: Permission of the Department. A student repeating Applied Social Science N-485 for a second time registers for credits under Applied Social Science N-486. (3 credits)

Social Science

Assistant Professor of Social Science
JACK GOLDNER

41.20 Department of Applied Social Science

Professor and Chairman of the Department
RICHARD McDONALD

Professor
HEDLEY DIMOCK

Assistant Professor
ROBERT NAGGE

Lecturer
RAYE KASS

41.20.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60	**BA Major in Applied Social Science**
	Year I
6	App Soc Sc N212[6]
	Year III
6	App Soc Sc N-400[6]
	Years I, II & III
18	App Soc Sc N-351[3], N-413[6], N-431[6], N-451[3], N-452[3], N-441[3], N-421[3], N-471[6]
6	Psy N-271[6]
6	Soc: Area I
6	Soc: Area III
6	Soc: Area III or IV
6	Psy* N-422[6], N-428[6], N-438[6], N-442[6], N-452[6], N-454[6]

**NOTE: In certain years 'Selected Problems' sections in Psy may be substituted with the approval of the Departmental Chairman. Psy N-271 must be taken in Yr I by students having CEGEP Psy or at the latest in Yr II.*

60	**BA Major in Social Welfare**
6	Econ N-209[3], N-210[3]
6	Pol Sc N-320[6]
6	Psy N-211[6]
6	Soc N-210[6]
12	Soc electives
12	Econ or Pol Sc or Psy electives
6	App Soc Sc N-461[6]
6	Psy N-241[6]; or Soc N-241[6]

41.20.2 COURSE DESCRIPTIONS

APPLIED SOCIAL SCIENCE N-212 (212)
Introduction to Applied Social Science

This course is an orientation to the field of applied social science with a specific focus on relating to and working with other people. It includes a consideration of personal identity, interpersonal relations and concepts of helping relationship . (6 credits)

APPLIED SOCIAL SCIENCE N-321 (321)
Introduction to Social Gerontology

The course will deal with the problem of growing old in contemporary society; and with the biological, psychological and sociological dimensions of the human aging processes. The course is also designed to identify the needs of the elderly in our community and to examine approaches to dealing with these needs. (3 credits)

APPLIED SOCIAL SCIENCE N-351 (251)
Understanding Group Behaviour

This is laboratory course which includes participating in a group and analyzing such common group dynamics as leadership, communication, decision-making, member roles and sensitivity to others. (3 credits)

APPLIED SOCIAL SCIENCE N-400 (400)
Introduction to Social Intervention

Prerequisite: Permission of the Department. Introduction to the principles and practice of social intervention. Approaches to social problem identification and analysis. The role of the social change agent. Elements of working with individuals, groups and communities. Laboratory periods will permit the application of course content to practice. (6 credits)

APPLIED SOCIAL SCIENCE N-413 (413)
Adolescent Behaviour in Urban Areas

Prerequisite: Applied Social Science N-212. A survey of adolescent values, family and group relations, social mobility, friendship patterns, educational and vocational adjustment with a focus on understanding social behaviour in urban communities. Attention will also be given to programmes attempting to enhance adolescent development and reduce social problems. (6 credits)

APPLIED SOCIAL SCIENCE N-421 (421)
Administration in Community Serving Organizations

Prerequisite: Permission of the Department.

41.21 Department of Economics

Associate Professor and Chairman of the Department
MORTON STELCNER

Professors
MURIEL ARMSTRONG
MORIDO INAGAKI
DOUGLAS FISHER
JOHN O'BRIEN
SHREEKANT PALEKAR

Associate Professors
JALEEL AHMAD
A. ANASTASOPOULOS
VITTORIO CORBO
GEORGE DAVIDOVIC
ANDRÉ MARTENS
FRANK MÜLLER
BALBIR SAHNI
ABRAHAM TARASOFSKY

Assistant Professors
JOHN BRESLAW
PHILIP JACOBS

Visiting Professor
STEPHEN MARGLIN

Visiting Assistant Professor
STEPHEN MEHAY

41.21.1 PROGRAMMES

Student are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60	BA Honours in Economics
6	Econ N-209[3] and Econ N-210[3]
18	Econ N-311[6], N-318[6], N-415[6]
6	Econ N-270[3] or Math N-203[3]* and Econ N-271[3] or Math N-206[3]
6	Math N-207[3] and Econ N-375[3] or QM 243[3] and 244[3]
6	Econ N-430[6], N-434[6], N-438[6]
18	Econ electives

**Students who take Math N-203[3] must, in addition, take Math N-205[3]*

42	BA Major in Economics
6	Econ N-209[3] and N-210[3]
6	Econ N-311[6]
6	Econ N-318[6]
6	Econ Hist chosen from Econ N-430[6], N-434[6], N-438[6]
6	Math N-207[3] and Econ, N-375[3] or QM 243[3] and 244[3] or equivalent.
12	Econ Electives

30	Minor in Economics
6	Econ N-209[3] and N-210[3]
6	Econ N-311[6]
6	Econ N-318[6]
12	Econ Electives

41.21.2 COURSE DESCRIPTIONS

ECONOMICS N-209 (209)
Introduction to Microeconomics

An introduction to the analysis of price and wage determination in industry. The differences between competition and monopoly and their implications for prices and economic efficiency are analyzed. The analysis is used to evaluate, among other areas, government policies concerning the regulation of business, including environmental pollution and the distribution of income in a Canadian context. (3 credits) *NOTE A/See § 200.1*

ECONOMICS N-210 (210)
Introduction to Macroeconomics

This course is an introduction to the analysis of aggregate economic activity and the operation of the banking system. The theoretical analysis is applied to a discussion of such problems as unemployment, inflation and the balance of international payments and to a consideration of what the government can do to solve the problems. (3 credits) *NOTE A/See § 200.1*

ECONOMICS N-221 (221)
Introduction to Economic History

This course deals with the development of industrial economics from the Industrial Revolution to the present. Emphasis is a long-term forces, such as demographic, technological, and institutional evolution. (6 credits) *NOTE A/See § 200.1*

ECONOMICS N-270 (281)
Mathematics for Economists I

Prerequisite: Economics N-209 and N-210. In this course, the basic topics of differential and integral calculus will be treated, together with

some economic applications. The aim of this course is to equip the student with the elementary tools necessary for understanding the economic literature. (3 credits) *NOTE A/See § 200.1*

ECONOMICS N-271 (282)
Mathematics for Economists II

Prerequisite: Economics N-209 and N-210, N-270 or Mathematics N-203 and N-205, or equivalent. Constrained maximization and minimization; introduction to vector spaces; matrices and determinants; linear programming. (3 credits) *NOTE A/See § 200.1*

ECONOMICS N-274 (218)
The Use of Economic Data

Prerequisite: Economics N-209 and N-210. Concepts of economic accounting and related measurement techniques, with special reference to the procedures used in Canada and in international economic institutions like the U.N., I.M.F., and O.E.C.D. The topics include: national accounts, input-output tables, flow-of-funds accounts, national balance sheets, international and interregional comparison of economic data, choice of index. (3 credits)

ECONOMICS N-304 (431)
Canadian Economic Policy I

Prerequisite: Economics N-209 and N-210. A study of government policies of resource allocation with emphasis on Canadian policy problems. Topics will include government regulation of business, agriculture policy, transportation policy, and tariff policy. (3 credits) *NOTE A/See § 200.1*

ECONOMICS N-305 (432)
Canadian Economic Policy II

Prerequisite: Economics N-209 and N-210. A study of trade, government stabilization, growth, and welfare policies with emphasis on Canadian policy problems. Topics will include monetary and fiscal policies, policies to encourage growth, and social security policies. (3 credits) *NOTE: Students who have credits for Economics N-405, or Economics N-431 before 1969-70 may not take this course for credits.*

ECONOMICS N-311 (411)
Intermediate Microeconomic Theory

Prerequisite: Economics N-209 and N-210 or equivalent. This course is designed for the student honouring or majoring in Economics. It is a basic course in microeconomic theory; market price determination, theory of consumer demand, theory of the firm, and distribution theory. (6 credits) *NOTE A/See § 200.1*

ECONOMICS N-316 (451)
Money and Banking

Prerequisite: Economics N-209 and N-210. A general study of the modern theory of income determination and of the principles of commercial and central banking. In particular, the course will deal with the nature and functions of money, national income accounting; some aspects of modern monetary theory, monetary and fiscal policy, commercial and central banking as an instrument of monetary policy, the structure and mechanism of the modern money market, foreign exchange and the problem of inflation. Special emphasis will be placed on monetary and banking problems in Canada. (6 credits) *NOTE A/See § 200.1*

ECONOMICS N-318 (452)
Intermediate Macroeconomic Theory

Prerequisite: Economics N-209 and N-210. A basic course in macroeconomic and monetary theory; with particular reference to the role of monetary institutions and monetary policies. (6 credits) *NOTE A/See § 200.1 This course is intended primarily for students honouring and majoring in Economics. Others should take Economics N-316.*

ECONOMICS N-375 (375)
Introduction to Statistics for Economists

Prerequisite: Mathematics N-207. The course is an introduction to the application of statistical techniques to economic data. Topics discussed will include, among others, time series, statistical inference, analysis of variance, correlation and regression. (3 credits) *NOTE A/See § 200.1 Credits will be given for only one 6 credit course or two 3 credit courses from Economics N-375, Geography N-362 and N-363, Mathematics N-241, Quantitative Methods N-243 and N-244, Statistics 242, Sociology N-241, Psychology N-241 and Psychology N-242.*

ECONOMICS N-411 (412)
Advanced Microeconomic Theory

Prerequisite: Economics N-209 and N-210, Economics N-311. An extension of microeconomic theory with emphasis on some of the contemporary literature. (6 credits)

ECONOMICS N-412 (484)
Mathematical Economics I

Prerequisite: Economics N-209 and N-210 or equivalent; Economics N-311; N-316 or N-318. Economics N-270, N-271, or Mathematics N-203, N-205, N-206; or permission of the Department. Demand theory: classical theory and an introduction to the contemporary theory of demand, revealed preference, von Neuman utility functions. Production theory; linear production functions, CES production functions, technological change, input-output analysis, introduction to linear programming. (3 credits)

ECONOMICS N-413 (485)
Mathematical Economics II

Prerequisite: Economics N-412, or permission of the Department. General equilibrium models, existence and stability; capital accumulation over time. (3 credits)

ECONOMICS N-415 (421)
History of Economic Thought

Prerequisite: Economics N-209 and N-210 or equivalent; Economics N-311, N-316 or N-318. A brief study of the development of economic thought, with special emphasis on the Classical and Neo-classical period, as an introduction to modern economic theories. Designed primarily for honours students. (6 credits)

ECONOMICS N-418 (453)
Advanced Macroeconomic Theory

Prerequisites: Economics N-209 and N-210, N-318. An extension of Economics N-318 with emphasis on some of the contemporary literature. (6 credits)

ECONOMICS N-420 (454)
Economics of the Public Sector

Prerequisite: Economics N-209 and N-210 or equivalent. The general objectives of this course are to provide the student with a basic theoretical framework within which to examine the economic role of government and to examine a number of current policy issues in public finance (such as proposals for tax reform, pollution problems and guaranteed annual income schemes). Emphasis is placed on studying the role of government in promoting efficient resource allocation and "equitable" income distribution. (6 credits)

ECONOMICS N-422 (461)
International Economic Relations

Prerequisite: Economics N-209 and N-210. Postwar international institutions: IMF, GATT, etc. The international monetary system, its problems and proposed reforms. Currency areas, exchange control systems and clearing systems. European integration and the common market. (3 credits)

ECONOMICS N-423 (462)
Theory of International Trade

Prerequisites: Economics N-209 and N-210, N-311. A study of the theories of comparative costs and reciprocal demand and their development; the theory of factor reward equalization; the theory of foreign exchanges; the theory of tariffs, customs union theory, and related topics in the theory of international trade. Emphasis will be placed upon the theoretical rather than the institutional analysis of international economics, though

the labour theory of value, the theory of economic development, and the breakdown of capitalism. (3 credits)

ECONOMICS N-465 (443)
Soviet Economics

Prerequisites: Economics N-209 and N-210 or N-221. A study of the Soviet economic system and its evolution, its influence on other communist countries, how it differs from western and developing countries. Attention will be given to Lenin's role in the early stages of the Russian Revolution, the period of War — Communism, N.E.P. (New Economic Policy), Stalinist economic planning, the importance of heavy industry, the agricultural sector and the consumer, post-Stalinist industry, the agricultural sector and the consumer, post-Stalinist trends including the economic reforms inspired by Liberman. (3 credits)

ECONOMICS N-468 (447)
Theory and Practice of Cooperation

Prerequisites: Economics. N-209 and N-210 or N-221, or permission of the Department. This course will deal with the effect of cooperatives on economic and social development with emphasis on Quebec and Canada. Among the topics discussed are the origins and development of the cooperative economy, differences between cooperative, capitalist and communist economic systems; economic, social, educational and moral transformations taking place under cooperative influence, and the role of cooperation on the international political scene. (6 credits)

ECONOMICS N-470 (480)
Mathematics for Economists III

Prerequisite: Economics N-271 or permission of the Department. Quadratic forms, introduction to differential equations and difference equations. (3 credits)

ECONOMICS N-471 (481)
Mathematics for Economists IV

Prerequisite: Economics N-470 or permission of the Department. Differential and difference equations, introduction to calculus of variations. (3 credits)

ECONOMICS N-476 (482)
Econometrics I

Prerequisite: Economics N-270 and N-271, or equivalent; and either Mathematics N-207 and Economics N-375, or Quantitative Methods N-243 and N-244, or Mathematics N-241, or equivalent. A study of the econometric problems generally associated with single equation multiple regression analysis. A knowledge of basic matrix algebra and mathematical statistics is required. (3 credits)

ECONOMICS N-477 (483)
Econometrics II

Prerequisite: Economics N-476 or equivalent. In the first part of this course there will be a brief discussion of the estimation problems associated with simultaneous equation econometric problems. The second will be devoted to the analysis of certain specific economic models proposed in the literature. (3 credits)

ECONOMICS N-490 (491)
Study in a Special Subject

Prerequisite: Permission of the Department. This course is designed primarily for honours and major students. Its purpose is to provide an opportunity for advanced students to intensify their study beyond the traditional areas of specialization already represented by the curriculum. The selected subject will vary with the special interest of the instructor offering the course in any given year. (6 credits) *NOTE C/See § 200.1*

ECONOMICS N-491 (492)
Study in a Special Subject

Prerequisite: Permission of the Department. A student repeating Economics N-490 a second time registers for credits under Economics N-491. (6 credits)

ECONOMICS N-493 (493)
Advanced Study in a Special Subject

Prerequisite: Permission of the Department. This course is designed primarily for honours and major students. Its purpose is to provide an opportunity for students to intensify their study beyond the traditional areas of specialization already represented in the curriculum. The selected subject will vary with the special interest of the respective instructor offering the course. (3 credits) *NOTE C/See § 200.1*

ECONOMICS N-494 (494)
Advanced Study in a Special Subject

Prerequisite: Permission of the Department. A student repeating Economics N-493 a second time registers for credits under Economics N-494. (3 credits)

the theories will be illustrated by consideration of current problems in itnernational economic affairs. (3 credits)

ECONOMICS N-426 (426)
Urban Economics

Prerequisite: Economics N-209 and N-210. This course will focus on the basic issues of explaining the process of economic growth and stagnation, the problems of the urban public economy, and special urban problems such as pollution, congestion, poverty, and housing and urban renewal. (3 credits)

ECONOMICS N-427 (427)
Regional Economics

Prerequisite: Economics N-209 and N-210 or equivalent; Economics N-311; N-316 or N-318 previously or concurrently. The primary emphasis is placed upon techniques and methods of regional economic analysis. Among the topics included are: conceptual problems in regional accounting; regional cycles; inter-regional trade theory; input-output analysis in a regional context; measures and analysis of industrial location; and public expenditure analysis in an urban-regional setting. (3 credits)

ECONOMICS N-428 (472)
Labour Economics

Prerequisite: Economics N-209 and N-210 or equivalent; Economics N-311 or N-316 or N-318 previously or concurrently. A study of the theoretical aspects of the labour market; the historical theories of wages; the derivation of demand and supply curves of labour; the theory of wage differentials; labour force measurement; the relation between wage changes and employment; wages and prices; labour productivity and labour's share of national income; types and theories of unemployment; problems of full employment; public policy on wages. These topics will be illustrated by relevant statistical and other material relating to Canada. (3 credits)

NOTE: Students who have credits for Economics 271 or 471 before 1969-70 may not take this course for credits.

ECONOMICS N-429 (471)
Industrial Relations

Prerequisites: Economics, N-209 and N-210. A study of the general and practical problems that arise in the labour field, such as collective bargaining, the legal framework for the settlement of industrial disputes, the weapons of industrial conflict; the labour movement; contemporary labour issues such as automation, cost-push inflation and structural unemployment. These topics will be illustrated by facts relating to industrial relations in Canada. (3 credits)

ECONOMICS N-430 (420)
Economic History of Modern Europe

Prerequisites: Economics N-209 and N-210, or N-221. The course will explore the causes and consequences of the British Industrial Revolution and its diffusion to the Continent in terms of differential national growth patterns and social problems associated with economic change. It will include an analysis of free trade, economic nationalism, the new imperialism, the importance of the crisis of 1929 in terms of economic organization, thought and policy, and post World War II reorganization, in terms of planning the welfare state, and economic integration. (6 credits)

ECONOMICS N-434 (424)
Economic History of Canada

Prerequisites: Economics N-209 and N-210, or N-211. This course is designed to introduce the student to Canadian economic development from the early period of settlement to the present day. Emphasis will be placed on the economic history of Canada since Confederation. (6 credits)

ECONOMICS N-438 (428)
Economic History and Development of the United States

Prerequisites: Economics N-209 and N-210, or N-221. This course will deal with the economics of the colonial period, the economic causes of the American Revolution, the role of the North Atlantic Triangle (the U.S., Great Britain and Canada). American economic development prior to and after the Civil War until and including the Great Depression. Following the New Deal period emphasis will be placed on the war economy and postwar economic development. The postwar U.S. international trade and aid policy will also be covered. (6 credits)

ECONOMICS N-440 (422)
Economic Development

Prerequisites: Economics N-209 and N-210; N-311. A study of the general principles and problems of economic development. There will be some empirical analysis of problems of capital formation, fiscal policies, population growth, foreign investment, and supply of entrepreneurship in selected countries. The theoretical analysis will examine critically the content and applicability of the various growth models including the classical Marxist, Schumpetarian, Harrod-Domar, Rostow models of economic growth and techniques of development planning in terms of investment criteria and priorities. (6 credits)

ECONOMICS N-442 (488)
Quantitative Development Economics I

Prerequisites: Economics N-209 and N-210; N-271 or equivalent; N-311. Methods of national accounting and input-output analysis for underdeveloped countries. Methods of comparing standards of living. Patterns of economic development. Appraisal of models constructed on the premises of modern theories of economic development. (3 credits)

ECONOMICS N-443 (489)
Quantitative Development Economics II

Prerequisite: Economics N-442. The model of economic policy. Planning in stages. The model of linear activity analysis and efficient decentralization of economic decisions. Planning of efficient accumulation of capital. Individual project evaluation. Foreign aid and debt service models. Projection of manpower requirements. Evaluation of empirical applications of optimum planning to underdeveloped economies. (3 credits)

ECONOMICS N-446 (423)
The Economic Development of Quebec

Prerequisites: Economics N-209 and N-210. This course will review past and present trends in the economic development of Quebec, though emphasis will be placed on the economic growth of Quebec since the Second World War. Attention will be given to the regional aspects of its growth problems. (3 credits)

ECONOMICS N-460 (445)
Contemporary Economic Systems

Prerequisite: Economics N-209 and N-210, or N-221. A comparative study of contemporary economic systems. While mainly concerned with the institutional features of contemporary free market economies, the course will also deal with their counterpart, the systems of a command economy and a Socialist market economy. Of primary interest will be the institutions, mechanisms and policies which govern allocation, efficiency, growth and distribution of income, with emphasis on the historical background of the institutions and the social, political and ideological influences which continue to shape them. (6 credits)

ECONOMICS N-464 (444)
Marxian Economics

Prerequisite: Economics N-209 and N-210, or N-221. A general survey of Marxian theory; Marx's role and influence; his predecessors and followers. The topics that will be discussed include historical and dialectical materialism, the role of the proletariat in Marxian teaching, Marx and the Socialist International, the evolution of Marxian thought, Marx and the labour movement,

motivation, growth and development, adjustment, individual differences, guidance, and concept of self. (6 credits)

EDUCATION N-230 (230)
Introduction to Philosophy of Education
This course will introduce the student to the content and form of several major educational theories, and to conceptual and logical procedures of philosophizing about education with particular reference to teaching and learning. (3 credits)

EDUCATION N-261 (261)
Subject and Methods of Early Childhood Education
Prerequisite: Acceptance in Early Childhood Education. Students in this course will be concerned with the following topics: art, music and dance, drama, language, number, and environmental studies. They will specialize in three topics. (6 credits)

EDUCATION N-311 (311)
Technology for Educational Change
This course comprises a systematic introduction to the role of technology in facilitating educational alternatives. The following topics may be considered: mass communications, computer-based systems, audio-visual instrumentation, simulation and gaming, behaviour science technology, instructional design, learner-controlled instruction, artificial intelligence. (6 credits)

EDUCATION N-315 (315)
Developmental and Educational Psychology of Early Childhood
Prerequisite: Second year standing in Early Childhood Education major or permission of the Department. This course will study the affective and cognitive development of the child from birth to six years with particular reference to the way in which familial and educational factors interact to influence the child's behaviour. Observation of the preschool child in both home and school settings for six hours a week for two terms is a course requirement. (6 credits)

EDUCATION N-390 (390)
Current Issues in Education
A consideration of a contemporary issue or issues in education. The issues studied may differ from year to year. (3 credits)*NOTE C/See § 200.1*

EDUCATION N-391 (391)
Current Issues in Education
Prerequisites: Education N-390 and permission of the Department. A student repeating N-390 for a second time registers for credits under Education N-391 (3 credits)

EDUCATION N-392 (392)
Problems in Education
A cross-disciplinary or integrated approach to an educational problem or problems. The problem studied may vary from year to year. (3 credits) *NOTE C/See § 200.1*

EDUCATION N-393 (393)
Problems in Education
Prerequisites: Education N-392 and permission of the Department. A student repeating N-392 for a second time registers for credits under Education N-393. (3 credits)

EDUCATION N-401 (401)
Special Methods of Teaching-Elementary
This course is offered only to students enrolled in the Certificate in Education programme. This course will deal with methods of teaching in the elementary school. The course will be individually designed to suit the student's needs. (3 credits)

EDUCATION N-402 (402)
Special Methods of Teaching-Secondary
This course is offered only to students enrolled in the Certificate in Education Programme. This course will deal with methods of teaching a high-school subject. The course will be individually designed to suit the student's field of specialization. (3 credits)

EDUCATION N-415 (415)
Education of the Slow-Learning Child
Prerequisite: Education N-210 or N-315. This course will describe the cognitive, social and emotional problems of slow-learning children and discuss educational techniques for coping with these problems. (3 credits)

EDUCATION N-416 (455)
Education of the Gifted
Prerequisite: Education N-210 or N-315. This course will discuss the special educational problems of gifted children; it will also assess the effectiveness of the techniques usually employed to deal with these problems. (3 credits)

EDUCATION N-417 (442)
Education of the Culturally Disadvantaged.
Prerequisite: Education N-210 or N-315. This course will describe the cognitive, social and emotional problems of culturally disadvantaged children and discuss educational techniques for coping with their problems. (3 credits)

EDUCATION N-421 (421)
Sociology of Education
Prerequisite: Sociology N-210. the social organization of education activities. The role of educational institutions in socialization, social control and technology. Education and stratification, mobility and social change. (6 credits) *NOTE A/See § 200.1*

EDUCATION N-430 (411)
Philosophy of Education
Prerequisite: 3 credits at university level in Philosophy or Education N-230. The application of philosophical method with particular reference to the aims, methods, discipline and concepts of education is considered in this course. Students will be expected to become familiar with the principal authors and with the current periodical literature in the field of philosophy of education. (6 credits)

EDUCATION N-441 (431)
History of Educational Ideas
Prerequisite: 3 credits in History at university level. In this course students will study major educational ideas and idea systems. These will be reviewed in philosophical, religious, political and social perspective. (6 credits) *NOTE A/See § 200.1*

EDUCATION N-442 (422)
Education in Canada
Prerequisite: 6 credits in Canadian History. It is advisable that students have a reading knowledge of French. This course will study the history of Canadian education, and, more particularly, the history of education in Quebec. (3 credits)

EDUCATION N-451 (451)
Comparative and International Education
Prerequisite: 6 credits in Education. The study of educational systems at home and abroad with particular emphasis on educational practice in the United States, the United Kingdom, Western Europe, the Soviet Union, China and the Third World. (6 credits)

EDUCATION N-453 (453)
Education in Quebec
Students in this course will study the contemporary movements in and structures of Quebec education. (3 credits)

EDUCATION N-460 (460)
Early Childhood Education Internship
Prerequisite: Third-year standing in Early Childhood Major, This course involves a supervised nursery school or kindergarten teaching internship of 5 half-days or 2½ full days a week for one semester. In addition, students will participate in weekly seminar discussions of related methodological and developmental concerns. The topics will include behaviour management, language development, reading, writing, children's literature and drama, mathematics, science, health, safety and social studies. (6 credits)

41.22 Department of Education

Associate Professor and Chairman of the Department
JITENDRA BHATNAGAR

Professors
HAROLD ENTWISTLE
JOHN HARRISON

Associate Professor
GARY BOYD

Assistant Professors
GARY COLDEVIN
MONA FARRELL
FRANCES FRIEDMAN
GEORGE HUNTLEY
DAVID MITCHELL

Assistant Professor of Education and Psychology
DONNA WHITE

Visiting Assistant Professor
DENNIS J. DICKS
ARPI HAMALIAN
WILLIAM KNITTER

Lecturers
ELLEN JACOBS
CAROLYN LAVERS
FLORENCE STEVENS

41.22.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § *41.3*

60 BA Major in Early Childhood Education

33 Ed N-202[6], N-261[6], N-315[6], N-453[3], N-460[6], N-461[6]
12 Art N-251[6], Music N-421[6]
6 Ed N-421[6], N-430[6], N-441[6], N-451[6] (in consultation with Department)
6 Ed N-415[3], N-416[3], N-417[3], (in consultation with Department)
3 Psy N-212[3], N-213[3], N-214[3], N-215[3], N-302[3], N-303[3], N-304[3], N-305[3], N-402[3], N-403[3] (in consultation with Department)

NOTE: Every student unless specifically exempted by the director of the programme is required to undertake an internship in the third year as well as internships or workshops in Education N-202, N-215, N-261 and Music N-421.

72 BA Honours in Education and Philosophy

Year I
9 Ed N-210[6], N-230[3]
12 Phil N-210[6] or N-211[6]; Phil N-221[6] or N-231[6]

Year II
6 Ed N-430[6]
6 Phil N-380[6]
6 Ed N-421[6], N-441[6], N-451[6]
6 Phil N-231[6], N-368[3], N-378[3], N-431[6]

Year III
6 Ed N-480[6]
6 Phil electives at '400' level excluding Phil N-493, N-495
3-6 Ed N-490[3], N-491[3], N-492[3], N-493[3]
6 Phil N-369[6]

Year II or III
3-6 Ed N-415[3], N-416[3], N-417[3]

30 Minor in Education

30 Ed N-201[6], N-210[6], N-230[3], N-311[6], N-390[3], N-392[3], N-415[3], N-416[3], N-417[3], N-421[6], N-430[6], N-441[6], N-451[6], N-497[3]

30 Minor in Philosophy of Education

30 Ed N-201[6], N-230[3], N-430[6], N-441[6], N-490[3], N-491[3], N-492[3], N-493[3]

41.22.2 COURSE DESCRIPTION

For other courses and programmes which may be of particular interest to teachers. See § 141

EDUCATION N-201 (212)
The Nature and Function of Teaching
An introduction to the purpose, theories and methods of teaching. (6 credits)

EDUCATION N-202 (202)
Introduction to Early Childhood Education
Prerequisite: Enrolment in Early Childhood Education major. This course provides an introduction to Early Childhood Education through an examination of curriculum planning for nursery schools, kindergartens and daycare centres and their historical background, organization, and objectives. Students are required to participate in assigned preschool and daycare programmes six to eight hours a week for two terms. (6 credits)

EDUCATION N-210 (210)
Psychology of Education
This course will introduce the student to a broad range of content in educational psychology including its scope and methods, learning,

41.23 Department of Geography

Assistant Professor and Chairman of the Department
DAVID FROST

Professors
DONALD FRASER

Associate Professors
RONALD BRYANT
HARRY CLINCH
MICHAEL MARSDEN
BRIAN SLACK
JAMES YOUNG

41.23.1 PROGRAMMES

Student are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60 BA Honours in Geography

Pattern A Physical Geography

Year I
18 Geog N-211[6], N-260[3], N-261[3], N-271[6]

Years II & III
12 Geog N-362[3], N-391[3], N-341[6]
18 Geog N-371[6], N-372[6], N-373[6], N-475[3], N-476[3]
6 Geog electives (excluding those listed above)

Year III
6 Geog N-491[6]

60 BA Honours in Geography

Pattern B Human Geography

Students following this pattern may specialize in Historical Geography.

Year I
18 Geog N-211[6], N-260[3], N-261[3], N-271[6]

Years II & III
12 Geog N-362[3], N-391[3], N-341[6]
18 Geog N-316[6], N-321[6], N-322[6], N-412[6], N-422[6], N-423[6]
6 Geog electives (excluding (those listed above)

Year III
6 Geog N-491[6]

60 BA Honours in Geography

Pattern C Economic Geography

Students following this pattern may specialize in Urban Geography.

Year I
18 Geog N-211[6], N-260[3], N-261[3], N-271[6]

Years II & III
12 Geog N-362[3], N-391[3], N-341[6]
18 Geog N-331[6], N-350[3], N-355[6], N-357[6], N-434[6], N-451[6], N-457[3]
6 Geog electives (excluding those listed above)

Year III
6 Geog N-491[6]

42 BA Major in Geography

18 Geog N-211[6], N-260[3], N-261[3], N-271[6]
12 N-341[6], N-362[3], N-391[3]
12 Geog Electives

30 Minor in Geography

12 Geog N-211[6], N-271[6]
6 Geog N-260[3], N-261[3]
12 Geog electives

41.23.2 COURSE DESCRIPTIONS

GEOGRAPHY N-211 (211)
Introduction to Human Geography

A study of the evolution of the earth's populated area and the gradual enlargement of geographical horizons. The emphasis will be on cultural distributions, landscape and settlement, and the geography of economic, social, and political activities. (6 credits) *NOTE A/See § 200.1*

GEOGRAPHY N-260 (260)
Introduction to Cartography I

A study of the map as a tool of the geographer. Assignments of a practical nature will emphasize the history, design, drawing and use of maps. Additionally, the course will focus on the use and application of qualitative and quantitative materials and methods as they relate to modern cartography. Lectures and laboratory. (3 credits)
NOTE: Students who have credits for 060 or 061; or N-261 or 261 before 1973-1974 may not take this course for credits.

GEOGRAPHY N-261 (261)
Introduction to Cartography II

Prerequisite: Geography N-260 or permission of the Department. A study of the map and its use in portraying different types of information in various ways. Additionally, the course will focus on the use of air photos and their interpretation as an aid to the cartographer. Design balance and drawing skills are further developed. Lectures and laboratory. (3 credits) *NOTE A/See § 200.1*

GEOGRAPHY N-271 (231)
Introduction to Physical Geography

An introduction to the earth sciences as they

EDUCATION N-461 (461)
Issues in Early Childhood Education
Prerequisite: Enrolment in Early Childhood major. This course will provide a study of alternative practices and theories of education for preschool and kindergarten children. (6 credits)

EDUCATION N-465 (459)
Adult Education
Prerequisite: 6 credits in Education. This course will study the history, philosophy, organization and special problems of formal and informal adult education, with particular reference to current developments in Canada. (3 credits)

EDUCATION N-471 (471)
Supervised Internship
This course is offered only to students enrolled in the Certificate in Education Programme. Teaching internship will be carried out in the school where the students is employed. The students will be supervised and their teaching performance evaluated. The students are expected to demonstrate positive evidence of teaching competence and professional behaviour. (6 credits)

EDUCATION N-480 (490)
Honours Essay in Education
Open to third-year students in honours in Education and Philosophy (or to others by permission of the Department). (6 credits)

EDUCATION N-490 (412)
Seminar in Epistemology and Education
Prerequisite: Education N-430 or permission of the Department. Theories of knowledge are considered in this course, with special attention being given to the bearing of such topics as perception, evidence, truth, knowing and belief on educational thought and practice. Students will be expected to become familiar with recent periodical and other literature in the field. (3 credits)

EDUCATION N-491 (413)
Seminar in Ethics and Education
Prerequisite: Education N-430 or permission or the Department. Students in this course will study the principles and methods of moral justification in education. They will be referred to the writing of main authors and recent periodical literature. (3 credits)

EDUCATION N-492 (492)
Seminar in Aesthetics and Education
Prerequisite: Education N-430 or permission of the Department. The nature of aesthetic value and experience, and theories of art and beauty will be examined. The development of the emotions and imagination and their functions in aesthetic awareness are central concerns of this course. Students will be expected to become familiar with the relevant literature in the field. (3 credits)

EDUCATION N-493 (493)
Seminar in Philosophy and Education
Prerequisite: Education N-430 or permission of the Department. This is an advanced seminar in philosophical analysis and theory in which students will present papers on, and conduct discussions about, educational concepts, aims and practices. Students will be expected to become conversant with the periodical and other literature in the areas under discussion. (3 credits)

EDUCATION N-497 (497)
Selected Topics in Education
Prerequisite: Education N-201, or one year's teaching experience, or permission of the Department. Special topics accommodating the interests of the instructor and students. The topics studied may differ from year to year. (3 credits) *NOTE C/See § 200.1*

EDUCATION N-498 (498)
Selected Topics in Education
Prerequisite: Permission of the Department. A student repeating Education N-497 for a second time registers for credits under Education N-498. (3 credits)

These courses were given in the summer of 1974.

EDUCATION N-413/1 (413/1) 513/1 A
Major Themes in Educational Psychology
Topic for 1974: Problems in Child Development

ED. TECH. 505/1 A
Foundations of Educational Technology

ED. TECH. 536/1 A
Development and Evaluation of Educational Materials

EDUCATION N-563/1 A
Special Topics in Early Childhood Education
Topic for 1974: The Development and Organization of Centres for Early Childhood

ED. TECH. 593/1 A
Management of Learning Resources

relate to the environment of man, with special emphasis upon weather, climate and the evolution of landscape. (6 credits) *NOTE A/See § 200.1*

GEOGRAPHY N-316 (416)
Human Geography

Prerequisite: Geography N-211, or second year standing in a honours or departmental major programme in Social Sciences. A study of the historical development and methods of research of Human Geography. The course will focus on the following topics: distribution of population, geography of health, distribution of race, language and religion, settlement geography, and the cultural landscape. (6 credits)

GEOGRAPHY-INTERDISCIPLINARY STUDIES N-321 (448)
Early Man

An examination of the scientific evidence for the unwritten part of man's evolutionary history. The course will study both food-gathering man and food-producing man. The roles of the biological and cultural components will also be considered (6 credits)

NOTE: This course may be counted for credits in either Interdisciplinary Studies or Geography.

GEOGRAPHY N-322 (421)
Historical Geography of the United States

Prerequisite: Geography N-211 or second year standing in an honours or departmental major programme in the Social Sciences. A study of the patterns of colonization and settlement. Some emphasis will be placed on the evaluation of various approaches used in the writing of historical geography. (6 credits) *NOTE A/See § 200.1*

GEOGRAPHY N-331 (431)
Urban Geography

Prerequisite: Geography N-211, or second year standing in an honours or departmental major programme in the Social Sciences or the Faculty of Commerce. A study of the prehistoric town, the Greek and Roman town, towns in the Middle Ages, the trading city, the pioneer town and the modern metropolis. The distribution of such towns, their development, growth and internal pattern of organization will be looked at from an historical and geographical point of view. Problems of conurbations and large metropolitan cities in the present age will be discussed and evaluated. Special emphasis will be given to Canadian cities, to their site, function, organization, growth and development as well as to urban problems relating to zoning, transportation, urban renewal, etc. (6 credits)

GEOGRAPHY N-341 (441)
Regional Geography of Canada

Prerequisite: Geography N-211 or N-271 or second year standing in an honours or departmental major programme in the Social Sciences or the Faculty of Commerce.

A study of Canada, past and present, based on the various natural regions into which the country is divided. In the first half of the course an historic-geographical approach will be taken to bring to the student's attention the main trends in Canadian cultural and historical development from aboriginal times to the present. The changing nature on man-land relationships at different periods of time, and under different forms of occupance, will receive particular attention. In the second half of the course the present day pattern of human occupance on a regional and national basis will be analyzed. (6 credits)

GEOGRAPHY N-345 (445)
The Geography of a Selected Region

Prerequisite: Geography N-211 or N-271, or second year standing in the SGW Faculty of Arts. A detailed examination of the physical environment, the people, their history, and the present political and economic patterns within the region. The course will provide a deep understanding of the interrelationships between the constituents of the region, an appreciation of those factors responsible for regional unity and will also illustrate the holistic nature of the geographical discipline. (6 credits)

GEOGRAPHY N-350 (458)
Geography of Agriculture

Prerequisite: Twelve credits in Geography or permission of the Department. Classification of agriculture systesm; food production in relation to new biological, cultural and marketing developments. There will be some consideration of land use mapping and land potential assessment. (3 credits)

GEOGRAPHY N-355 (455)
Spatial Organization

Prerequisite: Geography N-211 or second year standing in an honours or major programme in the Social Sciences or in the Faculty of Commerce. A study of how man organizes spatial activities with the emphasis on the concepts of spatial interaction, location of activities, diffusion and individual decision. (6 credits)

GEOGRAPHY N-357 (457)
Resource Utilization and Conservation

Prerequisite: Geography N-211 or second year standing in an honours or departmental major programme in the Social Sciences or the Faculty of Commerce. The resource concept and concepts of conservation. The regional approach to resource management. Case studies of the problems in developing particular natural resources and of interstate areas of poor economic health, with emphasis on the regional and natural parts of such developments. Special emphasis will be given to Canadian problems and those of selected underdeveloped countries. (6 credits)

GEOGRAPHY N-362 (242)
Quantitative Geography I

Prerequisite: Geography N-261. An introductory course in the applications of descriptive and analytical statistical techniques in Geography. Lectures and laboratory. (3 credits)

NOTE: Only 6 credits will be given from Economics N-375; Geography N-362 and N-363; Mathematics 241; Quantitative Methods N-243 and N-244; Statistics 242; Sociology N-241; Psychology N-241 and N-242.

GEOGRAPHY N-363 (243)
Quantitative Geography II

Prerequisite: Geography N-362. A study of selected multivariate techniques and their application in geography. Practical projects using computer facilities will be assigned. A course in Computer Science would be an asset. (3 credits)

NOTE: Only 6 credits will be given from Economics N-375; Geography N-362 and N-363; Mathematics 241; Quantitative Methods N-243 and N-244; Statistics 242; Sociology N-241; Psychology N-241 and N-242.

GEOGRAPHY N-371 (471)
Biogeography

Prerequisite: Geography N-271 or second year standing in an honours or departmental major programme in the Faculty of Science. A study of distribution of plants and animals with emphasis on their soil and climatic interrelations. Relevant field trips are included. (6 credits)

GEOGRAPHY N-372 (472)
Physical Geography

Prerequisite: Geography N-271 or second year standing in an honours or departmental major programme in the Faculty of Science. A review of modern theories and techniques in geomorphology, hydrology, pedology, denudation chronology and landscape classification. The course includes a discussion of the Pleistocene Epoch in terms of applied research methods. (6 credits)

GEOGRAPHY N-373 (473)
Climatology

Prerequisite: Geography N-271 or second year standing in an honours or departmental major programme in the Faculty of Science. The broad as-

pects of world regional climates considered from the point of view of both physical and dynamic climatology. The course includes practical work. (6 credits)

GEOGRAPHY N-391 (461)
History of Geographical Thought

Prerequisite: Eighteen credits in Geography. A study of the development of the field of geography from ancient times down to the present. Representative geographical works of the Greeks, the Romans and of the Middle Ages. The Age of Discovery, the 19th and 20th centuries will be examined and discussed. The present day concepts of the field and function of geography will receive special attention. (3 credits)

GEOGRAPHY N-412 (412)
Political Geography

Prerequisite: Geography N-316 or permission of the Department. A systematic approach to political geography, on the international and intra-state scales. Emphasis will be on the role of geopolitics and on the interaction of socio-economic fields with politico-administrative spatial structures. (6 credits)

GEOGRAPHY N-422 (422)
Historical and Political Geography of Quebec and Ontario.

Prerequisite: Geography N-211, N-341 or permission of the Department. A study of an historian nature of past geographic patterns economic, social cultural and political - in Quebec and Ontario. (6 credits)

GEOGRAPHY N-423 (411)
Historical and Political Geography of Europe

Prerequisite: Geography N-211 and one of Geography N-316, N-321, N-331. A regional survey of the geographical evolution of European nations and states. Consideration will be given to cultural differentiation and to the distribution of population. (6 credits)

GEOGRAPHY N-434 (434)
Applied Urban Geography

Prerequisite: Geography N-211; Geography N-331. A study of urban centres today with the emphasis on the problems arising from urban growth. Attention will be given to the various ways of guiding urban growth - zoning by-laws, and European development controls, and the possibilities of planned development. (6 credits)

GEOGRAPHY N-451 (452)
Special Seminar in Economic Geography

Prerequisite: Geography N-211, N-355, N-362* or permission of the Department. This course will provide opportunities to senior students for discussion and advanced study. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. (6 credits)

GEOGRAPHY N-457 (460)
Geography of Transportation

Prerequisite: Geography N-211, N-331 or N-355 or permission of the Department. A study of patterns of transport facilities and traffic flows. Emphasis will be on general concepts of route alignment, network layouts, and on applications of spatial interaction models to economics flows. (3 credits)

GEOGRAPHY N-466 (466)
Applied Cartography

Prerequisites: Geography N-261 and twelve additional credits in Geography. Advanced techniques in map and diagram making and usage related to all aspects of human and physical geography, with special emphasis on the practical solution of cartographic problems. Practice periods and assignments. (6 credits)

GEOGRAPHY N-475 (475)
Hydrology I

Prerequisite: Geography N-271, one of Geography N-371, N-372, or N-373 or final year standing in the Faculties of Science or Engineering. Theories and practice of hydrology with emphasis on geographical aspects and resource utilization. Includes introduction to glaciology. (3 credits) *NOTE A/See § 200.1*

GEOGRAPHY N-476 (476)
Hydrology II

Prerequisite: Geography N-475. Soil moisture experiments, textural analysis, hydrological models and field trips. (3 credits)*NOTE A/See § 200.1*

GEOGRAPHY N-491 (492)
Research Methods

Prerequisite: Final year standing in Honours Geography. A selected review of the methods and techniques used to acquire and process original geographical information in the field and laboratory. Includes field work and practical sessions. (6 credits)

These courses were given in the summer of 1974.

GEOGRAPHY N-349/1 (449/1)
Northern Development and Native Peoples

GEOGRAPHY N-359/1 (459/1)
The Perception of Environment

GEOGRAPHY N-499/1 (499/1)
Frontiers in Geographical Teaching

41.24 Department of History

Professor and Chairman of the Department
ROBERT E. WALL

Professors
ALAN H. ADAMSON
E. E. McCULLOUGH
J. CAMERON NISH
LIONEL ROTHKRUG
GEORGE RUDÉ
RICHARD WILBUR

Associate Professors
CHARLES L. BERTRAND
FREDERICK BODE
ROBIN BURNS
FRANK R. CHALK
J. TERRY COPP
DONALD GINTER
JOHN L. HILL
FREDERICK H. KRANTZ
JOHN F. LAFFEY
STEPHEN SCHEINBERG
IRVING H. SMITH

Assistant Professors
RICHARD J. DIUBALDO
MARTIN SINGER
EDWARD WHITCOMB

41.24.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60 BA Honours in History

Year I
6 Hist N-210[6]
6 Hist electives at '200' level
6 Electives Hist at '200' level or related disciplines (with approval of Department)

Year II
6 Hist N-390[6]
12 Hist electives*

Year III
6 Hist N-490[6]
6 Hist electives at '400' level
6 Hist electives
6 Electives in Hist or related disciplines (with approval of the Department)

**Not more than 18 credits in History may be taken at the '200' level*

48 BA Major in History

Year I
6 Hist N-210[6]
6 Hist electives at '200' level

Year II
6 Hist electives
6 Hist electives at '300' or '400' level

Year III
6 Hist electives
6 Hist electives at '400' level
12 Electives in related disciplines or History (with approval of the Department)

66 BA Honours in Philosophy and History

Year I
6 Hist N-210[6]
6 Phil N-211[6]

Year II
6 Hist N-390[6]
12* Hist N-333[6], N-335[6], N-336[6]
6 Phil N-380[6]
6 Phil N-301[6], N-401[6], N-403[6]

Year III
6 Hist N-490[6]
6 Phil N-405, N-407
6 Hist electives at '400' level (in consultation with departmental honours advisor.)
6 Phil electives at '300' or '400' level (in consultation with departmental honours advisor)

**Six of these credits may be taken in Year III.*

30 Minor in History

6 Hist N-210[6]
6 Hist N-221[6], N-251[6], N-261[6]
12 Hist electives at '300' level
6 Hist electives at '300' or '400' level

66 BA Honours in Religion and History

Pattern A (Asia)
30 Hist N-210[6], N-261[6], N-361[6], N-362[6], N-390[6]
24 Rel N-213[6], N-311[6], N-312[6], N-313[6]
12 Soc* N-210[6], N-424[6]

NOTE: (a) With the approval of the honours representative, any 6 credits at '400' level Hist or Rel may be substituted for any specific course.
(b) For students interested in the comparative aspects of Islamic development, Hist N-365[6] is available.

Pattern B (Europe)
12 Hist N-210[6], N-390[6]
6 Rel N-211[6], N-213[6]
42 Hist N-331[6], N-332[6], N-333[6], N-336[6] Rel N-327[3], N-328[3], N-330[3], N-361, N-362[6], N-443[6]; Soc* N-210[6], N-424[6]

**Students taking Soc N-210 in honours programme must also take Soc N-424*

HISTORY N-210 (213)
History of Europe in the Modern World
A survey of the history of European civilization. An attempt is made to present and analyze in an integrated way all aspects of European society and culture in its rise to a dominant world position. (6 credits) *NOTE A/See § 200.1*

HISTORY N-211 (211)
History of Ancient and Mediaeval Civilization
The story of early mankind is outline and the origins of the great civilizations of Europe and Asia are studied. After surveying the classical civilizations, the course concludes with a study of the mediaeval period. (6 credits). *NOTE A/See § 200.1*
NOTE: This course does not fulfill prerequisite requirements for advanced courses in History.

HISTORY N-221 (221)
History of Canada
A study of the growth of Canada from the age of exploration to the present time. Emphasis is placed on the political, economic and cultural developments which are of significance in the understanding of the problems of today.
NOTE A/See § 200.1

HISTORY N-251 (251)
History of the United States
An analysis of the development of the United States, emphasizing the formation of classes and interest groups in early America, the significance and impact of slavery, the sectional battle over national power and its resolution through Civil War and Reconstruction, the development of the modern corporation, the organization of the labour movement, the impact of racism, and the course of American Expansion. (6 credits)
NOTE A/See § 200.1

HISTORY N-261 (261)
History of Asia
A survey of the major intellectual traditions, social structures and political institutions of South and East Asia, with particular attention to the changes in the societies of India and China during the past two centuries. (6 credits)
NOTE A/See § 200.1

HISTORY N-321 (423)
British North America: 1760-1873
Prerequisite: History N-210 or N-221. An advanced study of the history of British North America from the British conquest and American Revolution to Confederation. The course will focus on historical topics and problems of interpretation, organized according to the regions of British North America. (6 credits)

HISTORY N-322 (424)
Modern Canada: 1840 to the Present
Prerequisite: History N-210 or N-221. An intensive study of the political, economic and cultural development of Canada since the Act of Union. (6 credits)
NOTE A/See § 200.1

HISTORY N-323 (422)
French Canada to 1763
Prerequisite: History N-210 or N-221. An intensive study of Canada during the colonial regime. Much of the material will be in French. (6 credits)

HISTORY N-325 (425)
French Canada: 1763-1867
Prequisite: History N-210 or N-221. An intensive study of French Canada from the Conquest to Confederation. Much of the material will be in French. (6 credits)

HISTORY N-326 (426)
Quebec: 1867 to the Present
Prerequisite: History N-210 or N-221 previously or concurrently. An intensive study of Quebec since confederation. While due attention will be paid to the political history of Quebec, the purpose of the course is to provide a study of the social, economic and cultural institutions of Quebec. (6 credits) *NOTE A/See § 200.1*

HISTORY N-328 (328)
Women in Western History
A review of the position and roles of women in Western history prior to the 17th century. Beginning with the 17th century, a more detailed discussion of these themes and close scrutiny of selected problems having to do with the roles of women in Europe, Canada and the United States during the last two centuries. Among the problems to be treated will be the history of the Feminist movements, the realtionship of women to the process of industrialization and the impact of the world wars of this century on the condition of women. (6 credits)

HISTORY N-331 (412)
History of Mediaeval Europe
Prerequisite: Second year standing. A study of the society and institutions of mediaeval Europe from the fall of Rome to the end of the 15th century. (6 credits)

HISTORY N-332 (414)
History of Early Modern Europe, 1400-1640
Prerequisite: History N-210. European history in the renaissance and Reformation periods. Special attention is given to the shift from Mediaeval to Renaissance civilization in Italy and to the development of early modern societies in Northern Europe. Specific analytical focus is placed on studying the nature of, and relationships between, pre-modern economic, social and cultural structures. Issues involved in the transition to modern societies on different national bases are also stressed. (6 credits)

HISTORY N-333 (415)
Enlightenment and Revolution, 1640-1848
Prerequisite: History N-210. European history in the age of the French Revolution, including a study of the scientific and industrial revolutions. (6 credits)

HISTORY N-335 (442)
Social and Intellectual History of Early Modern Europe
Prerequisite: History N-210. A study of change and continuity in European society and culture, 1300-1650. Problems studied include feudal-capitalist relationships, the Italian Renaissance, Northern State Development, Protestant Reformation, Scientific Revolution and European Colonial expansion. Methodological issues will be emphasized. (6 credits)

HISTORY N-336 (444)
Social and Intellectual History of Modern Europe
Prerequisite: History N-210. The intellectual systems arising in Europe since the 17th century will be explored in the context of the economic and social circumstances which engendered them. This course will begin with the rise of theories of "possessive individualism" and will end with the contemporary cultural crisis. While attention will be paid to the general dynamics of culture, special attention will be devoted to the social functions of particular ideologies. (6 credits)

HISTORY N-337 (413)
History of European Diplomacy, 1870 to the Present
Prerequisite: History N-210 or Political Science N-385. An intensive study of the relations amongst the Great Powers of Europe from the Franco-Prussian War to the present. (6 credits)

HISTORY N-341 (441)
History of Russia
Prerequisite: History N-210. This course traces the origin of the Slavic-speaking peoples in Europe and the emergence of the Russian Empire.

After a discussion of the ideology and history of Bolshevism, it studies the history of communist government in the U.S.S.R. and among the Slavic peoples. (6 credits)

HISTORY N-345 (431)
History of Britain Since 1460

Prerequisite: History N-210; students honouring in English may register without prerequisite. A survey of the political, economic and social development of modern England. Emphasis is placed on the evolution of parliamentary government in the early period, on the economic changes of the 18th and 19th centuries and on the modern growth of democracy and the social service state. (6 credits)

HISTORY N-346 (416)
Europe - 1848-1918

Prerequisite: History N-210. A study of the internal development and external relations of the most important states of Western Europe from 1848 to 1918. (6 credits) *NOTE A/See § 200.1*

HISTORY N-347 (418)
Europe - Since 1918

Prerequisite: History N-210. A study of the internal development and external relations of the Western states of Europe from 1918 to the present. (6 credits)

HISTORY N-351 (453)
Colonial and Early National History of the United States

Prerequisite: History N-210 or N-251 or permission of the Department. The period of colonization, the development of colonial institutions, the war of independence and the emerging fabric of national life. (6 credits)

HISTORY N-352 (459)
Jacksonian Era, Civil War, and Reconstruction in the United States.

Prerequisite: History N-210 or N-251 or permission of the Department. The development of American political, social and economic life in the 19th century, including sectionalism and expansion, the characteristics of plantation slavery as a social system, the coming of the Civil War, and the aims and outcome of Reconstruction. (6 credits) *NOTE A/See § 200.1*

HISTORY N-354 (456)
History of the United States Since 1900

Prerequisite: History N-210 or N-251 or permission of the Department. This course examines major themes of modern American society including the politics of reform, strategies for black survival, and movements for social change. The major emphasis is given to domestic themes. (6 credits)

HISTORY N-355 (455)
Foreign Relations of the United States

Prerequisite: History N-210 or N-251 or permission of the Department. An analysis of United States foreign policy from 1776 to the present, emphasizing the development of American expansion, America's foreign economic thrust, the origins of the Cold War, America's response to the challenge of revolution in Asia, Africa and Latin American relations. (6 credits)

HISTORY N-358 (452)
Revolution and Counter-Revolution: The Background to Contemporary Latin America

Prerequisite: History N-210 or enrollment in the major in Spanish. A survey of the roots of instability and reaction in Latin America. Attention will be paid to the following major themes: the impact of the conquest; the socio-economic and political pattern of colonial Latin America; the character and significance of the wars of liberation; peasant and other popular movements; the origins and nature of modern liberation movements; the response of reaction. (6 credits)

HISTORY N-361 (461)
History of Modern India

Prerequisite: History N-261 or permission of the Department. A study of India, Pakistan and Bangladesh. The legacy of divergent cultural, linguistic and political experiences, the crisis of colonialism, and the emergence of national imperatives in the 20th century. (6 credits)

HISTORY N-362 (462)
Modern China

Prerequisite: History N-261 or permission of the Department. An intensive study of Chinese history since 1800 with emphasis on problems in political and intellectual history. (6 credits)

HISTORY N-363 (464)
Traditional China

Prerequisite: History N-261 or permission of the Department. An examination of Chinese history from the beginning to the Ch'ing dynasty (c. 1800). Emphasis will be placed on China's political, intellectual and cultural heritage. (6 credits)

HISTORY N-365 (481)
History of Africa

Prerequisite: History N-210 or N-261. An analysis of African history, including Egypt and North Africa, from the beginnings of African societies to the present, emphasizing the rise of African kingdoms, the coming of Europeans and the slave trade, African responses to economic imperialism and colonialism, and contemporary Africa's quest for autonomy, economic development, and the liberation of southern Africa. (6 credits

HISTORY N-390 (472)
Historical Method

Prerequisites: Twelve credits in History and written permission of the History programme advisor. A course in the application of modern historical criticism to a specific problem to be chosen in consultation with the instructor. (6 credits)

HISTORY N-421 (421)
Advanced Study in Canadian History

Prerequisite: A '300' level course in History or permission of the Department Seminar in a selected topic in the history of Canada. The emphasis will be on encouraging students to conduct historical investigation on their own under a professor's guidance. The specific content will vary from year to year depending on the instructor. (6 credits)

HISTORY N-431 (434)
Advanced Study in European History

Prerequisite: A '300' level course in History or permission of the Department. Seminar in a selected topic in the history of Europe. The emphasis will be on encouraging students to conduct historical investigation on their own under a professor's guidance. The specific content will vary from year to year depending on the instructor. (6 credits)

HISTORY N-445 (445)
Advanced Study in Russian and Soviet History

Prerequisites: History N-210; History N-341 or permission of the Department. This course deals with specific problems in Tsarist and Soviet Russia. In the Pre-Revolutionary period attention is focussed on the emancipation of the peasantry, industrialization and the growth of the opposition parties. In the Soviet period emphasis is placed on the problems of economic growth, the changing pattern of Soviet Marxism and the nature of Soviet foreign policy. (6 credits)

HISTORY - INTERDISCIPLINARY STUDIES N-446 (446)
Advanced Study in the History of Science

Prerequisite: Permission of the Department. Seminar in a selected topic in the History of Science. The emphasis will be on encouraging students to conduct historical investigation on their own under a professor's guidance. The specific content will vary from year to year depending on the instructor. (6 credits) *NOTE A,C/See § 200.1*

HISTORY - INTERDISCIPLINARY STUDIES N-447 (447)
Advanced Study in the History of Science

Prerequisite: Permission of the Department. A student repeating History Interdisciplinary Studies N-446 for a second time registers for credits under History Interdisciplinary Studies N-447. (6 credits)

HISTORY N-451 (451)
Advanced Study in American History

Prerequisite: A '300' level course in History or permission of the Department. Seminar in a selected topic in the history of the United States. The emphasis will be on encouraging students to conduct historical investigation on their own under a professor's guidance. The specific content will vary from year to year depending on the instructor. (6 credits)

HISTORY N-461 (463)
Advanced Study in Asian and African History

Prerequisite: A '300' level course in History or permission of the Department. Seminar in a selected topic in the history of Asia and Africa. The emphasis will be on encouraging students to conduct historical investigation on their own under a professor's guidance. The specific content will vary from year to year depending on the intructor. (6 credits)

HISTORY N-490 (474)
Honours Eassay

Prerequisite: Honours students only. A course in the application of modern historical criticism to a specific problem to be chosen in consultation with the instructor. (6 credits)

HISTORY N-491 (473)
Advanced Study in a Special Subject

Prerequisite: Permission of the Department. This course, intended primarily for honours or major students, affords an opportunity for more intensive examination of a particular historical theme than is possible in the normal lecture course. The specific subject will vary according to the special interest of the professor offering the course in any given year. (6 credits) *NOTE C/See § 200.1*

HISTORY N-492 (475)
Advanced Study in a Special Subject

Prerequisite: Permission of the Department. A student repeating History N-491 a second time registers for credits under history N-492. (6 credits)

HISTORY-SOCIOLOGY N-493 (493)
History and Sociology

Prerequisites: An introductory course in History and in Sociology and second or third year standing. A n exploration of the relationships between historical and sociological approaches to the description and analysis of social conditions and social events, paying special attention to questions of methodology and conceptualization. (6 credits)
NOTE: This course may be counted for credits in either History or Sociology.

These courses were given in the summer of 1974.

HISTORY N-327/1 627/1
Rise of Feminism in Canada, The United States and Britain, 1800-1920

HISTORY N-330/1 (430/1) 617/1
Society and Thought in Medieval Europe

HISTORY N-368/1 (468/1) 664/1
Recent India: Political Mobilization and Problems of Development

HISTORY N-367/1 (467/1) 692/1
Comparative Analysis of Revolutions in The Third World

41.25 Department of Political Science

Associate Professor and Chairman of the Department
HORST HUTTER

Associate Professors
HAROLD ANGELL
PARIS ARNOPOULOS
KLAUS HERMANN
LALITA SINGH

Assistant Professor
HARVEY SHULMAN

41.25.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60	**BA Honours in Political Sicence**
24	Pol Sc N-240[6], N-270[6], N-320[6], N-330[6]
12	Pol Sc N-415[6], N-491[6]
6	Pol Sc, Area I electives
6	Pol Sc, Area II electives
6	Pol Sc, Area III electives
6	Pol Sc, Area IV electives

48	**BA Major in Political Sociology**
18	Soc N-210, N-301[3], N-302[3], N-447
18	Pol Sc N-240, N-311, N-413
6	Soc N-430, N-431, Pol Sc N-320, N-415
6	Soc N-440[3] and N-441[3], N-443, N-446, N-455, N-471, Pol Sc N-333, N-334, N-335[3], and N-436[3], N-351, N-458

48	**BA Major in International Affairs**
27	Pol Sc N-270[6], N-381[6], N-437[3], N-483[6], N-485[6]
21	Electives with relevant international content (with approval of the Department)

60	**BA Honours in Political Sociology**
18	Soc N-210, N-301[3], N-302[3], N-447
18	Pol Sc N-240, N-311, N-413
12	Soc N-430, N-431 Pol Sc N-320, N-415
12	Soc N-440, N-441, N-443, N-446, N-455, N-471 Pol Sc N-333, N-334, N-335[3] and N-436[3], N-351, N-458
6	Soc N-481, Pol Sc N-491

45	**BA Major in Canadian Politics**
27	Pol Sc N-231[6], N-330[6], N-335[3], N-334[6], N-436[3], N-437[3]
12	Pol Sc electives in theory, comparative politics or international relations
6	Pol Sc or Cdn content elective (with approval of the Department of Pol Sc)

48	**BA Major Political Philosophy**
18	Pol Sc N-311[6], N-320[6], N-413[6]
6	Phil N-210[6], N-211[6]
24	Phil N-369[6], N-372[3], N-374[3], N-376[3], N-401[6], N-407[6]; Pol Sc N-415[6]; Soc N-430[6]

48	**BA Major Political Science**
6	Pol Sc N-311[6], N-320[6]
18	Pol Sc N-240[6], N-270[6], N-330[6]
6	Pol Sc, Area I electives
6	Pol Sc, Area II electives
6	Pol Sc, Area III electives
6	Pol Sc, Area IV electives

48	**BA Major in Comparative Political Studies**
12	Pol Sc N-240[6], N-458[6]
24	Pol Sc N-321[6], N-330[6], N-333[6], N-334[6], N-350[6], N-351[6], N-353[6], N-355[6]
12	Electives with relevant comparative or area studies content (with approval of the Department)

30	**Minor in Political Science**
18	Pol Sc N-240[6], N-270[6], N-320[6], N-330[6]
12	Pol Sc electives

41.25.2 AREAS

Area I - Theory		
N-311 - History of Political Thought	N-320 - Problems and Concepts in Political Theory	N-413 - Modern Political Ideologies
		N-415 - Political Analysis
Area II - Comparative Politics		
N-240 - Comparative Politics	N-350 - Government and Politics of the United States	N-355 - Politics of Developing Areas
N-321 - Women and the Law	N-351 - Political Systems of Western Europe	N-472 - Science and Public Policy
N-333 - Problems of Publics Administration	N-353 - Soviet and East European Politics	N-458 - Political Parties
N-434 - Urban Politics		
Area III - International Relations		
N-270 - International Relations	N-381 - International Law	N-485 - Diplomacy and Foreign Policy
	N-483 - International Organization	
Area IV - Canada		
N-231 - Public Law	N-330 - Government and Politics of Canada	N-335 - Quebec Politics
N-321 - Women and the Law	N-334 - Urban Politics	N-436 - Canadian Federalism
		N-437 - Canadian External Affairs

41.25.3 COURSE DESCRIPTIONS

POLITICAL SCIENCE N-231 (291)
Public Law

An introduction to Canadian public law through a discussion of certain aspects of constitutional law, criminal law, and adminsitrative law, as well as the emerging body of law related to consumer protection. In addition, the course will involve a study of the organization and functioning of the court system. (6 credits)

POLITICAL SCIENCE N-240 (211)
Comparative Politics

A course in comparative politics with special emphasis on the dynamics of the political process. Going beyond constitutional and institutional procedures, this course will include the study of informal realities of decision-making. Most of the illustrative content is based on a comparative study of Canada, the United States, Great Britain and France. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-270 (421)
International Relations

A course in world affairs dealing with the political, ideological and cultural relations between states and the main characteristics of the global power system. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-311 (431)
History of Political Theory

A critical study and analysis of such great thinkers as Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Bentham and Mill on problems of politics. This course is designed to give a survey of systematic political reasoning from the classical period up to the middle of the 19th century in an endeavour to show the foundations of modern political thought. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-320 (420)
Problems and Concepts in Political Theory

A course in political theory emphasizing key concepts such as equality, liberty and power. The content of the course will include basic methodology and terminology to the extent that the thematic orientation in any given year requires its inclusion. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-321 (425)
Women and the Law

A historical and comparative study of the status of women as seen in different legal systems. The course will deal with women in relation to private, family and public law. The framework will be primarily legal, but will also include a consideration of the social and political implications of women's legal status. Special attention will be directed to Quebec and Canadian law. (6 credits)

POLITICAL SCIENCE N-330 (251)
Government and Politics of Canada

A study of the parliamentary system in Canada with emphasis placed upon the development and judicial interpretation of the British North America Act, the federal system, the nature and organization of political parties, the evolution of cabinet rule, the judicial structure and contemporary problems in Canada. (6 credits) *NOTE A/SEE § 200.1*

POLITICAL SCIENCE N-333 (441)
Problems of Public Administration

Prerequisite: Political Science N-240 or N-330. This course deals with the nature and function of the administrative branch of government. The student is introduced to such problems as the organization of government departments, the management of government corporations, budgeting, selection and training of personnel, maintenance of morale and discipline, relationship between legislature and administration, relationship between the administration and the public. (6 credits)

POLITICAL SCIENCE N-334 (434)
Urban Politics

Prerequisite: Political Science N-240 or N-330. A course in the problems and prospects in urban politics with special emphasis on the processes of the local community. This course, although primarily dealing with urban politics in Canada, will also go beyond national boundaries for its comparative treatment. (6 credits)

POLITICAL SCIENCE N-335 (435)
Quebec Politics

Prerequisite: Political Science N-330. A study of the changing party structure and political issues in Quebec and their relationship to constitutional, cultural and economic factors. Some of the reading material will be in French. (3 credits)

POLITICAL SCIENCE N-350 (450)
Government and Politics of the United States

A study of American politics which will deal not only with formal political institutions such as the legislature, the executive and the judiciary, but also the processes and problems of government: public opinion, political parties, pressure groups, health and welfare, foreign policy and racial problems. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-351 (412)
Political Systems of Western Europe

Mainly a comparative study of the political systems of Britain, France and Western Germany, but some consideration will be given to the smaller states in Western Europe, such as Switzerland and the Scandinavian countries. (6 credits)

NOTE: Students who have credits for Political Science N-451 or either Political Science 416 or 417 before 1969-70 may not take this course for credits.

POLITICAL SCIENCE N-353 (453)
Soviet and East European Politics

A study of the constitutional, political and administrative system of the Soviet Union and the East European states. Emphasis will be placed on the continuing evolution of the Communist system and the changing relationship between the Soviet Union and the other states. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-355 (455)
The Politics of Developing Areas

A study of the politics and structure of government in developing areas such as Asia, Africa or South America against the background of social and economic change since World War II. The specific area which will be studied will vary from year to year depending on the interests of the instructor. (6 credits) *NOTE A/See § 200.1*

POLITICAL SCIENCE N-381 (423)
International Law

This course will survey the theory and practice of international law from its traditional classical origins to the modern contemporary developments with emphasis on the political and interstate relations aspects. The first half of the course will include basic concepts of the nature of law, state sovereignty, treaties, nationality, jurisdiction, recognition, arbitration and cases of international legal order; control of world conflicts, codification of law, settlement of disputes by the International Court of Justice, human rights and the relation of law to power politics. (6 credits) *NOTE A/See 200.1*

POLITICAL SCIENCE N-413 (432)
Modern Political Ideologies

Prerequisite: Political Science N-210 or 220 or N-311 or Philosophy N-271. This course will cover political theories of the 19th and 20th centuries, dealing with such ideologies as Liberalism, Conservatism, Marxism, Democratic Socialism and Fascism. (6 credits)

POLITICAL SCIENCE N-415 (433)
Political Analysis

Prerequisites: Political Science N-311 or N-320 and six credits in Political Science. A study of the contemporary subject matter and methods of political science. The course deals with: 1) fundamental concepts, principles, institutions, and processes of politics; 2) methods, techniques, instruments and data of social sciences; 3) present theories, such as functionalism, behaviouralism, formalism; 4) political ideals and their impact on policy making and social control. In addition to the theoretical analysis, critique and evaluation of the latest thinking in political science, the student will participate in testing and practical laboratory periods. (6 credits)

POLITICAL SCIENCE N-436 (451)
Canadian Federalism

Prerequisite: Political Science N-330. A critical and analytical study of the theory of federal government and its application to the nature, principles and techniques of federalism in Canada. The reaction of the Canadian federal system to the demands of cultural dualism and regional pressures. Some attention will also be given to the problems of provincial governments in their pressure on and adjustment to Dominion-Provincial relations. (3 credits)

POLITICAL SCIENCE N-437 (452)
Canadian External Affairs

Prerequisite: Political Science N-270 or N-330 or History N-337. This course will study Canada's position in the world. The presentation will include an outline of the diplomatic history of Canada, as well as an analysis of its foreign and defence policies. Emphasis will be given to the decision-making process by which policy is formulated and executed, with particular reference to Canadian relations vis-à-vis the Americans; the Commonwealth; and the United Nations. (3 credits)

POLITICAL SCIENCE N-458 (411)
Political Parties

Prerequisite: Political Science N-240 or N-451. A study of the history, ideology, organization and electoral geography of political parties in the United States, England, France, Germany and some of the smaller countries in Western Europe. The course will also deal with the different types of party systems, the nature and function of parties in the democratic process, the nature of political elites, pressure groups, the organization of elections and political propaganda. Lectures, discussions and term paper. (6 credits)

POLITICAL SCIENCE N-465 (465)
Advanced Study in a Special Subject

Prerequisites: Six credits in Political Science and enrollment in a major or honours programme in the Social Sciences. Subject matter will vary from year to year depending on the interests of the instructor. This course will provide opportunities to senior students for discussion and advanced study. (6 credits) *NOTE C/See 200.1*

POLITICAL SCIENCE N-466 (466)
Advanced Study in a Special Subject

Prerequisites: Political Science N-465 and permission of the Department. A student repeating Political Science N-465 for a second time registers for credits under Political Science N-466. (6 credits)

POLITICAL SCIENCE/INTERDISCIPLINARY STUDIES N-472 (472)
Science and Public Policy

Prerequisites: Interdisciplinary Studies N-201, N-202. The relationship between science and government. Particular emphasis is placed on such problems as the role of the scientist in political decision-making, the making of Canadian science policy, the mix of basic, applied and mission-oriented research, the relations of science and the military, the nature of technocracy and the role of science in economically developing nations. (6 credits)

POLITICAL SCIENCE N-483 (422)
International Organization

Prerequisite: Political Science N-210 or N-385. The historical development of the concepts of international organization with special emphasis upon the 19th and 20th centuries. The League of Nations and the United Nations with its specialized agencies will be examined carefully. In addition, certain other international bodies of a regional or specialized nature such as EEC, OAS, OAU and regional integration schemes in general will be considered. (6 credits)

NOTES: Only 6 credits will be given from Political Science 221 or 422.

POLITICAL SCIENCE N-485 (485)
Diplomacy and Foreign Policy

Prerequisite: Political Science N-270. Foreign and defence policies of the Great Powers; diplomacy, military strategy and intelligence; methods and techniques of policy-making and enforcement. (6 credits)

POLITICAL SCIENCE N-491 (491)
Honours Seminar

Prerequisite: Third year honours standing or permission of the Department. Students will choose a topic from one of the various fields in political science. Each student must prepare and submit an appropriate research paper under the supervision of the Department. (6 credits)

41.26 Department of Psychology

Professor and Chairman of the Department
JANE STEWART

Professors
HAROLD GOLDSMAN
GERALD MAHONEY
ALEX SCHWARTZMAN
JOSEPH ZWEIG

Associate Professors
ZALMAN AMIT
DAVID ANDRES
GABRIEL BRETON
JUNE CHAIKELSON
DOLORES GOLD
THOMAS GRAY
ANTHONY HILTON
WILLIAM HOOPER
TANNIS MAAG
STANLEY MUNOZ
ERAT NAYAR
CAMPBELL PERRY
NANCY TAYLOR
ROY WISE

Assistant Professors
THOMAS BOWMAN
WILLIAM BRENDER
MICHAEL BROSS
EDWARD BRUSSELL
DOROTHY HACCOUN
HENRY LAVIGUEUR
NORMAN SEGALOWITZ

Assistant Professor of Education and Psychology
DONNA WHITE

Adjunct Assistant Professor
GEORGE NEMETH

41.26.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequence *must* be read in conjunction with § 41.3

60 BA Honours in Psychology

Year I
18 Psy N-241[6] or N-242[6], N-273[6]*, N-412[6]

Year II
18 Psy N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-461[6] (Psy N-375[3] may be taken in addition.)

Year III
12 Psy N-413[6], N-472[6]
6 Psy N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-481[6], N-482[6], N-491[3], N-492[3], N-493[3], N-494[3]
6 Psy electives

**Students who have taken Psy N-271 in Yr I and who are then accepted into the honours programme will be exempted from Psy N-273, but may be requested to take Psy N-471 in Yr II.*

60 BA Honours in Social Psychology

Year I
6 Psy N-241[6], N-242[6]; Soc N-241[6]
6 Psy N-273[6]*
6 Psy N-412[6]; Soc N-430[6]
12 Soc N-210[6], N-301[3], N-302[3]

Year II
6 Soc N-420[6] (if Yr I Psy N-412); Psy N-442[6] (if Yr I Soc N-430)
6 Soc N-422[6], N-433[6], N-446[6]
6 Psy N-422[6], N-432[6], N-434[6]

Year III
6 Psy N-428[6]; Soc N-411[6]
6 Psy N-472[6]; Soc N-481[6]
6 Electives Anth, Soc, Psy

**Students who have taken Psy N-271 in Yr I and who are then accepted into the honours programme will be exempted from Psy N-273 but may be requested to take Psy N-471 in Yr II.*

42 BA Major in Psychology

6 Psy N-271[6], N-273[6]
6 Psy N-412[6]
6 Psy N-421[6], N-422[6], N-432[6], N-461[6]
24 Psy N-241[6] or N-242[6], N-375[3], N-413[6], N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-471[6], N-481[6], N-482[6], N-491[3], N-492[3], N-493[3], N-494[3]

42	BA Major in Social Psychology
6	Psy N-271[6], N-273[6]
12	Psy N-412[6] and Soc N-420[6] **or** Psy N-442[6] and Soc N-430[6]
6	Soc N-422[6], N-443[6], N-446[6]
6	Psy N-422[6], N-432[6], N-434[6]
6	Psy N-428[6]; Soc N-411[6]
6	Electives in Anth, Soc

30	Minor in Psychology
6	Psy N-271[6]
24*	Psy N-241[6] or N-242[6], N-412[6], N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-438[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-481[6], N-482[6]

**Six of these credits may be chosen from Psy N-302[3], N-303[3], N-304[3], N-305[3], N-402[3], N-403[3], N-404[3], N-405[3]*

41.26.2 COURSE DESCRIPTIONS

PSYCHOLOGY N-211 (211)
Introductory Psychology

The purpose of this course is the development of an adequate understanding of known principles of behaviour and experience. The work includes a study of the sense organs and nervous system, perception, learning, memory, motivation and the basic needs, emotional reactions, personality development, adjustment and integration, abnormal personality, mental abilities and aptitudes, social aspects of behaviour and the applications of psychology. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-212 (212)
Selected Problems in Learning and Motivation A

Prerequisite: Psychology N-211 or second year standing. This course will deal with a selected problem in learning and motivation to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: operant behaviour; memory; teaching and learning; maternal behaviour; aggression; sleep, (3 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-213 (213)
Selected Problems in Learning and Motivation B

Prerequisite: Psychology N-211 or second year standing. This course will deal with a selected problem in learning and motivation to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: operant behaviour; memory; teaching and learning; maternal behaviour; aggression; sleep. (3 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-214 (251)
Selected Problems in Individual Differences A

Prerequisite: Psychology N-211 or second year standing. This course will deal with a selected problem in individual differences to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: creativity; intelligence; self-awareness and self-esteem; leadership. (3 credits)

PSYCHOLOGY N-215 (252)
Selected Problems in Individual Differences B

Prerequisite: Psychology N-211 or second year standing. This course will deal with a selected problem in individual differences to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: creativity; intelligence; self-awareness and self-esteem; leadership (3 credits)

PSYCHOLOGY N-241 (241)
Statistical Methods in Psychology A

Prerequisites: Any two CEGEP semester courses in mathematics. A basic course in the fundamentals of statistics for psychology and education. Topics include: the construction of frequency distribution; graphic presentation; measures of central tendency and dispersion; correlation and linear regression; elementary probability theory; the binomial distribution and the normal curve; sampling or the reliability of statistics and tests of significance; Chi square; analysis of variance; miscellaneous non-parametric techniques. Lectures and laboratory. (6 credits)

NOTE: Only 6 credits will be given from: Economics N-471, N-375, Geography N-362, N-363, Mathematics 241, Quantitative Methods N-243, N-244, Statistics 242, Sociology N-241, Psychology N-241, N-242.

PSYCHOLOGY N-242 (242)
Statistical Methods in Psychology B

Prerequisite: One Semester in Statistics and Probability' at the CEGEP level or equivalent. A course in the fundamentals of statistical inference for psychology. (6 credits)

NOTE: Only 6 credits will be given from: Economics N-375, N-471, Geography N-362, N-363, Mathematics 241, Quantitative Methods N-243, N-244, Statistics 242, Sociology N-241, Psychology N-241, N-242.

PSYCHOLOGY N-271 (271)
Experimental Psychology 1A

Prerequisite: Psychology N-211. An examination of experimental method in psychology with an introduction to statistical techniques (primarily descriptive statistics) and laboratory experience in methodology appropriate to all areas of psychology. Lectures and laboratory. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-273 (273)
Experimental Psychology 1B

Prerequisites: Psychology N-211: Psychology N-241 or N-242 previously or concurrently and permission of the Department. An examination of experimental method in psychology, with laboratory experience in techniques appropriate to important problem areas. Lectures and laboratory. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-302 (436)
Selected Problems in Development A

Prerequisite: Second year standing. This course will deal with a selected problem in development to be announced each year. The course will be designed to allow a student to explore a problem in considerable depth starting from first principles. Possible topics are: perception of spoken and written language; developmental language disability; learning in infancy and early childhood; critical periods in early development. (3 credits)

PSYCHOLOGY N-303 (435)
Selected Problems in Development B

Prerequisite: Second year standing. This course will deal with a selected problem in development designed to allow the student to explore a problem in considerable depths starting from first principles. Possible topics are: perception of spoken and written language; developmental language disability; learning in infancy and early childhood; critical periods in early development. (3 credits)

PSYCHOLOGY N-304 (440)
Selected Problems in Social Psychology A

Prerequisite: Second year standing. This course will deal with a selected problem in social psychology to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: socialization of the child; social motives; interpersonal attraction; values, beliefs and attitude change; prescriptions for future man. (3 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-305 (441)
Selected Problems in Social Psychology B

Prerequisite: Second year standing. This course will deal with a selected problem in social psychology to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: socialization of the child; social motives; interpersonal attraction; values, beliefs and attitude change; prescriptions for future man. (3 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-309 (409)
Selected Topics in Adolescence

Prerequisite: Second year standing. This course will deal with selected problems in the psychology of adolescence. The course will be designed to allow the student to explore these problems in considerable depth starting from first principles. Possible topics are: physical change, sexual and sex-related behaviours, socialization identification, intelligence and cognitive growth, school achievement and lifestyles. (3 credits) *NOTE: Students who have taken Psychology N-303 (435) on adolescence may not take this course for credit.*

PSYCHOLOGY N-375 (275)
Directed Study and Research on a Selected Topic

Prerequisite: Psychology N-271 or N-273, and written permission from the Department Chairman and from the supervisor of the research. Under the supervision of a member of the Psychology Department, the student is to carry out and report in writing an independent research project. The area of study must be decided upon through consultation with a faculty member prior to registration. No lectures; consultation and laboratory only. (3 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-383
Sexual Differentiation

Prerequisites: Psychology N-211 and second year standing. This course will examine the physiological, genetic and social factors that determine sex identity and will consider how sex identity influences life patterns. The effects of these factors on social, motivational and congnitive development and adjustment will be studied. (6 credits)

PSYCHOLOGY N-402 (450)
Selected Problems in the Application of Psychology A

Prerequisite: Third year standing. This course will deal with a selected problem in the application of psychology to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: personnel selection technique; rehabilitation, psychological foundations; criminal behaviour; behaviour disorders; sexual differentiation; drugs and behaviour. (3 credits)

PSYCHOLOGY N-403 (449)
Selected Problems in the Application of Psychology B

Prerequisite: Third year standing. This course will deal with a selected problem in the application of psychology to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. Possible topics are: personnel selection technique; rehabilitation, psychological foundations; criminal behaviour; bahaviour disorders; sexual differentiation; drugs and behaviour. (3 credits)

PSYCHOLOGY N-404 (404)
Selected Problems in Psychology A

Prerequisite: Third year standing. This course will deal with a selected problem in psychology to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. The particular topic discussed will vary from year to year. (3 credits)

PSYCHOLOGY N-405 (405)
Selected Problems in Psychology B

Prerequisite: Third year standing. This course will deal with a selected problem in psychology to be announced each year. The course will be designed to allow the student to explore a problem in considerable depth starting from first principles. The particular topic discussed will vary from year to year. (3 credits)

PSYCHOLOGY N-412 (412)
Modern Psychology in Historical Perspective

Prerequisite: Psychology N-211. This course consists of an outline of the history of psychology from early times up to the recent past. The work includes the ancient and medieval background of psychology; the early contributions from the fields of physics and physiology; psychophysics; and historical background of the various schools of psychological thought from the late nineteenth century to the present day. (6 credits)

PSYCHOLOGY N-413 (413)
Contemporary Problems in Psychology

Prerequisite: Third year honours students or permission of the Department. An intensive treatment of current major problem areas in psychology. (6 credits)

PSYCHOLOGY N-421 (421)
Learning

Prerequisite: Psychology N-271 or N-273. A study of empirical findings and theoretical issues in the fields of animal and human learning. Topics covered include conditioning, discrimination learning, transfer, verbal learning, and classic and contemporary theoretical issues. (6 credits)

PSYCHOLOGY N-422 (422)
Motivation

Prerequisite: Psychology N-271 or N-273. Causal analysis of (for example) sleep, hunger, pain, sex, conflict, self-actualization, territoriality, aggression, population-density-dependent behaviour, cooperation and competition. Theories and myths vs. empirical data from physiological, behavioural, and politico-socio-economic studies, both animal and human. (6 credits)

PSYCHOLOGY N-428 (427)
Measurement in Psychology

Prerequisite: Psychology N-271 or N-273. A consideration of the general problems of measurement in psychology, including instrumentation and scaling procedures for measurement in psychology, including instrumentation and scaling procedures for measurement of psychological and physiological processes in the areas of sensation and perception, learning, social psychology and the psychology of individual differences. The use of various psychometric techniques in measurement of achievement, aptitude and personality will be appraised and questions of reliability and validity of tests will be discussed. (6 credits)

PSYCHOLOGY N-432 (432)
Perception

Prerequisite: Psychology N-271 or N-273. The physiological bases of sensation and perception and their relation to the basic psychological phenomena encountered in vision, audition, and the other senses will be studied. Phenomena such as pattern perception and the perception of distance and movement will be analyzed. The effects of learning, motivation, and social factors upon

perceptual processing will also be examined. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-434 (434)
Cognitive Processes

Prerequisite: Psychology N-271 or N-273. An investigation of the complex processes intervening between the stimulus and the response. Topics discussed will include cognitive and language development, psycholinguistics, organization and memory, problem-solving, concept formation, creativity, and cognitive and language disability. (6 credits)

NOTE: Students who have credits for Psychology 433 or 431 after 1968-69 may not take this course for credits.

PSYCHOLOGY N-438 (438)
Developmental Psychology

Prerequisite: Psychology N-271 or N-273. An experimental and comparative approach to human development from conception to old age, with emphasis on the period from birth to adolescence. Topics discussed will include language, social behaviour, intelligence, learning and perception. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-442 (442)
Social Psychology

Prerequisite: Psychology N-271 or N-273. A study of social factors in the behavious and attitudes of the individual and of groups, including a survey of the psychology of bias, prejudice, stereotypes, propaganda, opinion, individual and group morale, group dynamics and sociometry. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-452 (452)
Personality

Prerequisite: Psychology N-271 or N-273. The course surveys the various theories of personality and relationships between personality and behaviour. Individual differences in personality will be studied along with related factors such as age, sex, education, genetic and other physical factors, socio-economic level and other cultural factors. A brief survey and review of basic statistical concepts will be included along with a short introduction to personality measurement. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-454 (454)
Behaviour Disorders

Prerequisite: Psychology N-271 or N-273. A study of the etiology and description of behaviour and psychological disorders, including the psychoneuroses, psychoses and psychosomatic conditions. (6 credits)

PSYCHOLOGY N-461 (461)
Physiological Psychology

Prerequisites: Psychology N-211; and Psychology N-271 or N-273 or one full course in Physiology or General Biology at the CEGEP level or equivalent. This course attempts to relate neurophysiology to such psychological problems as learning, attention, and emotion. The topics treated include excitation and conduction in the neuron; synaptic mechanism; sensory and motor systems, the internal environment; the electrical activity of the brain. Emphasis is given to brain dramage studies in animals and man, and the problem of localization of function in the nervous system. (6 credits)

PSYCHOLOGY N-462 (462)
Comparative Psychology

Prerequisites: Psychology 211: Psychology N-271 or N-273 or one full credit in Biology at the CEGEP level or equivalent. A study of behaviour from a comparative viewpoint. Topics of study will include evolutionary changes in brain and behaviour, behaviour genetics and specific aspects of behaviour such as sensory capacities, motivation, emotion, learning, cognitive abilities and social behaviour. (6 credits)

PSYCHOLOGY N-471 (471)
Experimental Psychology II

Prerequisites: Psychology N-241 or N-242; N-271 or N-273 and permission of the Department. This course provides experience in the planning, conduct, analysis, and reporting of independent research in the major areas of psychology. Lectures and laboratory. (6 credits)

PSYCHOLOGY N-472 (472)
Advanced Experimental Problems

Prerequisite: Third year honours students or permission of the Department. Supervised investigation of special problems. Each student will be required to conduct an experimental study and to submit an appropriate research paper of the study, under the supervision of the Department. Lectures and laboratory. (6 credits)

PSYCHOLOGY N-481 (481)
Psychology of Work Organizations

Prerequisites: Psychology N-271 or N-273; and permission of the Department. The scientific study of human behaviour as it occurs in business and industry; an examination of the roles of workers, managers, and consumers, and studies of the social psychology of organizations. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-482 (482)
Psychology of Human Learning in the Classroom

Prerequisites: Psychology N-211 Psychology N-271 or N-273 and permission of the Department. A systematic examination of psychological principles and research reports which contribute to an understanding of human learning in the school. (6 credits) *NOTE A/See § 200.1*

PSYCHOLOGY N-491 (491)
Special Seminar on Selected Topics in Psychology

Prerequisite: Thir year honours and major students with permission of the Department. Subject matter will differ from term to term and from year to year to take advantage of the special interests of the seminar leader. The course will provide opportunities to senior students for discussion and advanced study. (3 credits) *NOTE C/See § 200.1*

PSYCHOLOGY N-492 (492)
Special Seminar on Selected Topics in Psychology

Prerequisite: Third year honours and major students with permission of the Department. Subject matter will differ from term to term and from year to year to take advantage of the special interests of the seminar leader. The course will provide opportunities to senior students for discussion and advanced study. (3 credits) *NOTE C/See § 200.1*

PSYCHOLOGY N-493 (493)
Special Seminar on Selected Topics in Psychology

Prerequisite: Permission of the Department. A student repeating Psychology N-491 for a second time registers for credits under Psychology N-493. (3 credits)

PSYCHOLOGY N-494 (494)
Special Seminar on Selected Topics in Psychology

Prerequisite: Permission of the Department. A student repeating Psychology N-492 for a second time registers for credits under Psychology N-494. (3 credits)

41.27 Department of Sociology and Anthropology

Associate Professor of Sociology, and Chairman of the Department
JOSEPH MOULEDOUX

Sociology

Professors
IAN CAMPBELL
SZYMON CHODAK
KURT JONASSOHN
HUBERT GUINDON
HAROLD POTTER
SOLOMON RAWIN

Associate Professors
TAYLOR BUCKNER
JOHN DRYSDALE
JOHN JACKSON
JOSEPH SMUCKER

Assistant Professors
WILLIAM REIMER
ANTHONY SYNNOTT

Lecturers
NELLIE BURMAN
VIVIENNE WALTERS

Anthropology

Professor
CHARLES BRANT

Associate Professor
ANATOLE KLEIN

Lecturer
PIETER de VRIES

41.27.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequences *must* be read in conjunction with § 41.3

60 BA Honours in Sociology

Year I

6	Soc N-210[6] or, if exempted, Soc elective (in consultation with Honours Advisor)
12	Soc N-241[6], N-301[3], N-302[3]

Year II

6	Soc N-411[6]
6	Soc N-430[6], N-431[6]
6	Soc electives, Area II
6	Soc electives, Area IV

Year III

6	Soc N-481[6]
12	Electives in Soc and Anth (in consultation with Honours Advisor)*

**With prior approval of the Honours Advisor the student may substitute some or all of these credits with credits from a related discipline(s)*

69 BA Honours in Sociology and Philosophy

Pattern A (Epistemology and Methodology)

6	Soc N-210[6] or, if exempted, Soc electives
6	Soc N-241[6], N-301[3], N-302[3]
12	N-411[6], N-481[6]
6	Soc N-420[6], N-430[6], N-431[6]
6	Soc N-422[6], N-494[6]
6	Phil N-210[6], N-211[6], N-221[6] or if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6]
6	Phil N-369[6], N-405[6]
3	Phil N-372[3], N-374[3], N-376[3]
6	Phil N-321[6], N-369[6], N-401[3], N-405[6], N-421[6], N-493[6]

72 BA Honours in Sociology and Philosophy

Pattern B (Man in Society)

6	Soc N-210[6] or, exempted, Soc elective
6	Anth N-211[6] or, exempted, Anth elective
12	Soc N-420[6], N-481[6]
6	Soc N-421[6], N-422[6]: Anth N-423[6]
6	Soc N-442[6], N-443[6], N-444[3], N-445[3], N-446[6], N-447[6], N-454[6]
6	Phil N-210[6], N-211[6] or, if exempted, Phil elective
6	Phil N-380[6]
6	Phil N-221[6], N-321[6], N-369[6]
6	Phil N-372[3], N-374[3], N-376[3], N-378[3]
12	Phil electives

60	BA Honours in Sociology and Religion
18	Anth N-211[6]; Rel N-213[6]; Soc N-210[6]
6	Rel N-301[3], N-302[3], N-363[6]
12	Rel N-311[6], N-312[6], N-313[6], N-326[3], N-327[3], N-328[3], N-330[3], N-361[6], N-362[6]
12	Rel N-491[6]; Soc N-430[6] or N-431[6]; Soc N-481[6]
6	Anth N-425[6]; Soc N-424[6], N-443[6], N-446[6], N-494[6]
6	Soc electives (in consultation with Department Honours Advisor)

**Students preparing for graduate work should acquire a good reading knowledge of French, German, Greek, Hebrew or Latin.*

42	BA Major in Sociology
6	Soc N-210[6] or, if exempted, Soc elective (in consultation with Major Advisor)
6	Soc N-301[3], N-302[3]
6	Soc N-411[6], N-412[6], N-415[6]
6	Soc N-430[6], N-431[6]
18	Soc electives (in consultation with Major Advisor)

30	Minor in Sociology
6	Soc N-210[6] or, if exempted, Soc electives (in consultation with Major Advisor)
6	Soc N-301[3], N-302[3]
6	Soc N-411[6], N-412[6], N-413[6]
6	Soc N-430[6], N-431[6]
6	Soc electives (in consultation with Major Advisor)

41.27.2 AREAS

Area I — Basic Methods, Epistemology and Methodology
N-241 — Statistics
N-301[3] — Introduction to Sociological Methods
N-413 — Survey Research Methods
N-411 — Research Techniques
N-412 — Fieldwork Research
N-494 - N-499 — Special Seminars

Area II — Social and Symbolic Nature of Man
N-420 — Self and Society
N-421 — Sociology of Deviance
N-422 — Sociology of Knowledge
N-424 — Sociology of Religion
N-443 — Collective Behaviour and Social Movements
N-494 - N-499 — Special Seminars

Area III — Theory
N-302[3] — Introduction to Sociological Theory
N-430 — Classical Sociological Theory
N-431 — Contemporary Sociological Theory
N-432 — Formal Organizations
N-446 — Social Class and Structured Inequality in Modern Society
N-455 — Comparative Social Systems
N-494 - N-499 — Special Seminars

Area IV — Special Studies
N-440[3] — Community Studies
N-441[3] — Sociology of Urban Regions
N-422 — Sociology of Knowledge
N-442 — The Family
N-443 — Collective Behaviour and Social Movements
N-444[3] — Intergroup Relations
N-445[3] — Intergroup Relations in Canada
N-447 — Political Sociology
N-448[3] — Population and Society
N-449[3] — Area Studies in Demography
N-450 — Seminar in Urban and Metropolitan Studies
N-452 — Law and Society
N-454 — Industry and Society
N-456 — History and Sociology
N-457 — Crime and Justice in Society
N-458 — Sociology of Sex Roles
N-470 — Canadian Social Structure
N-471 — Quebec Society
N-472 — Social Structure of the Soviet Union and Eastern Europe
N-481 — Honours Seminar
N-494 - N-499 — Special Seminars

NOTE: Not all courses, as listed above, will be given each year.

41.27.3 COURSE DESCRIPTIONS

SOCIOLOGY N-210 (212)
Introduction to Sociology
This course analyses social problems in modern society and introduces the student to the basic concepts and most important approaches in sociology. (6 credits)
NOTE A/See § 200.1

SOCIOLOGY N-241 (241)
Statistics
Prerequisites: One course in Sociology at CEGEP level or Sociology 011 or 111 or 211 or 212 or N-210; and high school Algebra. An introductory course in descriptive and analytical statistical methods for students of sociology. Lectures and laboratory. (6 credits)
NOTE: Only 6 credits will be given from: Economics N-471, N-375, Geography N-362, N-363, Mathematics 241, Quantitative Methods 243, 244, Statistics 242, Sociology N-241, Psychology N-241, N-242.

SOCIOLOGY N-301 (301)
Introduction to Sociological Methods
An introduction to the relationships between research problems and techniques. Students will deal with the formulation of research problems related to theoretical interests, and critically examine the range of techniques available for gathering and analyzing data. (3 credits)

SOCIOLOGY N-302 (302)
Introduction to Sociological Theory
The contributions of major scholars in sociology and related disciplines to theoretical development will be considered; also the main schools in sociology, the roles of theory in sociological research and the relationships between theory and research. (3 credits)

SOCIOLOGY N-411 (411)
Research Techniques
Prerequisites: One course in Sociology at CEGEP level or Sociology 011 or 111 or 211 or 212 or N-210, Sociology N-241 or equivalent, Sociology N-301. It is strongly recommended that the student take Sociology N-241 prior to, or con-

currently with Sociology N-411. This course deals with the design of research, the methods of data collection, and the techniques of analysis. A research project will be designed and carried out by the students. The emphasis will be on training for the critical reading of published research materials, as well as on training for graduate study. Lectures and laboratory. (6 credits)

SOCIOLOGY N-412 (402)
Fieldwork Research

Prerequisite: Sociology N-210, N-301. Methods of fieldwork research in Sociology will be explored and examined in detail. Students will be expected to formulate a research problem appropriate to fieldwork methods. Under the supervision of the instructor they will then carry out the actual research singly or in teams. (6 credits) *NOTE A/See § 200.1*

SOCIOLOGY N-413 (413)
Survey Research Methods

Prerequisites: Sociology N-210, N-241 or equivalent, Sociology N-291, third year standing. The methods of conducting survey research will be examined: research design, sampling methods, design and pre-testing of instruments, methods of data collection, logic of analysis, techniques of multivariate analysis, and report writing. Students will be required to participate in the execution of an actual survey research project. (6 credits)

SOCIOLOGY N-420 (425)
Self and Society

Prerequisite: Sociology N-210. A consideration of basic concepts and of the most important theories in social psychology. Motivation is viewed in terms of the interplay between actors and social structures, and this approach is illustrated by reference to selected empirical studies. (6 credits) *NOTE A/See § 200.1*

SOCIOLOGY N-421 (433)
Sociology of Deviance

Prerequisite: Sociology N-210. The nature of deviant or marginal behaviour: legal and non-legal forms. Socialization to deviance; institutionalization of deviance; social control of deviance, structure and culture of deviance. Theories of deviant behaviour and their sociological, legal and practical implications. (6 credits)

SOCIOLOGY N-422 (495)
Sociology of Knowledge

Prerequisite: Sociology N-210. An examination of the interaction between social structures and meaning and belief systems. Of special concern will be the social influences bearing upon claims to truth and validity and upon definitions of social morality. (6 credits)

SOCIOLOGY N-424 (432)
Sociology of Religion

Prerequisite: Sociology N-210. the major focus is on the institutionalization of religion. The interpretation of religious phenomena is sociological and not philosophical or theological, and stays within the tradition of historical and phenomenological studies of religion (Otto, Van der Leeuw, Eliade). Emphasis is placed on the approaches of sociology of knowledge and comparative sociology (Weber, Durkheim, Berger, Luckmann). (6 credits)

SOCIOLOGY N-430 (423)
Classical Sociological Theory

Prerequisite: Sociology N-210, N-302. Introduction to major theorists whose main works will be read and discussed. Emphasis will be on the classics to 1920, especially Comte, Spencer, Marx, Ward, Summer, G. H. Mead, M. Weber, Simmel, Durkheim and Pareto. Lectures and seminar. (6 credits)

SOCIOLOGY N-431 (424)
Contemporary Sociological Theory

Prerequisite: Sociology N-210, N-302. Analysis of the major trends and issues in twentieth century European and North American sociological theory. Emphasis is placed on issues and writings of contemporary significance. Attention is given to the major theoretical orientations, including neo-positivism, functionalism, neo-Marxism, symbolic interactionism, phenomenology and their respective critics. (6 credits)

SOCIOLOGY N-432 (428)
Formal Organizations

Prerequisite: Sociology N-210. A study of different methods of coordinating human action in social group operations under different environmental conditions. Particular focus is on role systems connected with multi-group structures. The course begins with an historical overview of the field, examines the relationships between formal organizations and their environment (e.g. culture, market structure) and ends with a comparative study of diverse and changing structures in some institutional areas of organization. (6 credits)

SOCIOLOGY N-440 (404)
Community Studies

Prerequisite: Sociology N-210. Based upon selected community studies, this course will focus upon an interpretation of the findings of these studies within the larger context of urbanization and industrialization with special emphasis given to the methodology of community studies. (3 credits)

SOCIOLOGY N-441 (441)
Sociology of Urban Regions

Prerequisite: Sociology N-210. The physical and social characteristics of urban communities are studied with special attention paid to ecological patterns and ecological process. Forms of adjustment, co-operation and control are included in these studies. (3 credits)

SOCIOLOGY N-442 (442)
The Family

Prerequisite: Sociology N-210. The course will deal with the following basic topics: mate selection, the social function of families, conjugal roles, social formation of the young, marriage across racial, religious and other social boundaries, and types of family structure. Other topics are added as time and interest permit. (6 credits)

SOCIOLOGY N-443 (422)
Collective Behaviour and Social Movements

Prerequisite: Sociology N-210. Characteristics of collective behaviour, its origin, development, and relationship to formal social structures. Methods of study and theories to explain to observed processes. The nature and function of social movements; their life histories and their relationship to the larger society. Specific case studies of religious, racial, and political movements. (6 credits)

SOCIOLOGY N-444 (447)
Intergroup Relations

Prerequisite: Sociology N-210. This course is concerned with the sociology of macro-group relations. The emphasis is on the social definition of race. The significance of colour, language, cultural and ethnic differences is examined within a context of stratification and power differentials. Attention is devoted to Caribbean societies, the U.S.A., South Africa and Rhodesia. The decolonization process, the functions and dysfunctions of intergroup conflict, and methods of reducing and increasing tension are discussed. (3 credits)

SOCIOLOGY N-445 (443)
Intergroup Relations in Canada

Prerequisites: Sociology N-444. Within the theoretical framework of intergroup relations ethnic groups in Canada will be examined. The groups will include Indians, Eskimos, Blacks, Jews, and English and French speakers. The mosaic theory of Canadian ethnic relations will be considered. (3 credits)

SOCIOLOGY N-446 (444)
Social Class and Structure Inequality in Modern Society

Prerequisite: Sociology N-210. Systems of so-

cial differentiation are analyzed. Theories about their origins and consequences, and about degrees and types of mobility related to them, are discussed. The theories are applied to Canada and to the United States as well as to other societies. (6 credits)

SOCIOLOGY N-447 (427)
Political Sociology

Prerequisite: Sociology N-210. The social and normative structures of political institutions, including political parties; the relationship between political institutions and religious and economic institutions; the rise and fall of political ideologies, systems and institutions; the making and communications of policies, the rejuvenation of elites. Political attitudes and behaviour are analyzed, as well as political socialization, interest, and involvement. (6 credits)

SOCIOLOGY N-448 (461)
Population and Society

Prerequisite: Sociology N-210, or an introductory course in a social science. This course consists of a brief survey of population theory and an introduction to the techniques of population analysis. It will cover the size, distribution, and composition of the population; changes in these characteristics; the relationship between population trends and social and economic conditions, with special reference to recent trends. (3 credits)

SOCIOLOGY N-449 (462)
Area Studies in Demography

Prerequisites: Sociology N-448. Selected topics of importance in population studies will be explored in some detail. Students will be required to submit a research paper on a significant demographic problem. (3 credits)*NOTE A/See § 200.1*

SOCIOLOGY N-450 (496)
Seminar in Urban and Metropolitan Studies

Prerequisites: Sociology N-441. Intensive study of a few theories and selected monographs dealing with aspects of urbanization. (6 credits)

SOCIOLOGY N-452 (449)
Law and Society

A study of the legal system as an institutionalized system of social control, with special emphasis on its role in times of rapid social change. Problems of definition, validation, enforcement and execution of the law will be examined in several areas of application and in relation to systems of stratification. Special attention will be given to the study of law and of legal organizations in contemporary society, as they intersect with other areas of sociological inquiry, especially social change, conflict, decision making, and the role of the legal professions. (6 credits)

SOCIOLOGY N-454 (465)
Industry and Society

Prerequisite: Sociology N-210. Analysis of the nature of change and its consequences in advanced industrialized societies. Special attention will be directed toward corporate structures, the labour movement, the function and meaning of work, leisure and changes in social stratification and the exercise of power. (6 credits)

SOCIOLOGY N-455 (497)
Comparative Social Systems

Prerequisite: Sociology N-210. Comparative analysis of concepts of social systems with a special account of conflict theory and functionalist approaches to the subject. Examination of problems of development, modernization and social change in a general theoretical framework. Comparative analysis of trends of development in the West, the Soviet Union and Eastern Europe, and the Third World Nations. (6 credits)

HISTORY-SOCIOLOGY N-456 (493)
History and Sociology

Prerequisites: An introductory course in History and in Sociology, and second or third year standing. An exploration of the relationships between historical and sociological approaches to the description and analysis of social conditions and social events, paying special attention to questions of methodology and conceptualization. (6 credits)*NOTE: This course may be counted for credits in either History or Sociology.*

SOCIOLOGY N-457 (457)
Crime and Justice in Society

Prerequisite: Sociology N-210. This course will focus on the theories and methods developed in criminology and penology since their modern development beginning with the 19th century. Sociological definitions of crime and the interplay between individual autonomy and communal controls will be analysed. (6 credits)

SOCIOLOGY N-458 (458)
The Sociology of Sex Roles

Prerequisite: Sociology N-210. This course will focus on sociological aspects of sex roles. Modern social trends will be analysed, with special attention to emerging egalitarian patterns and changes in the socio-economic system. (6 credits)

SOCIOLOGY N-470 (406)
Canadian Social Structure

Prerequisite: Sociology N-210. This course will focus on institutional patterns, with particular attention to the system of social stratification and industrial organization. Elements of differential structure, with special reference to Quebec society will be interpreted a) from the historical perspective of modernizing development, and b) within the context of the North American system. (3 credits) *NOTE A/See § 200.1*

SOCIOLOGY N-471 (407)
Quebec Society

The course focuses on the following topics: the nature of traditional society and the social forces within Quebec society since the Second World War. It will examine conflicting historical views on Quebec that are relevant to contemporary issues; the consequences of the conquest; the nature of Confederation; and the nature of nationalism and the nation state. Special attention is paid to the language issue, both federally and within Quebec. (6 credits) *NOTE A/See § 200.1*

SOCIOLOGY N-472
Social Structural of the Soviet Union and Eastern Europe

Prerequisite: Sociology N-210. The process of modernization in Russia and Eastern Europe under the socialist order. Within this context, the socialist model will be considered as a variant of "late" modernization, against the background of the Western entrepreneurial experience. A comparative analysis of the Soviet and Yugoslav industrial organization will be approached in terms of (1) historical continuities within each system, and (2) general patterns of socialist industrialism. (3 credits)

SOCIOLOGY N-481 (491)
Honours Seminar

Prerequisite: Honours students in their final year or permission of the Department. Students engage in a critical study of major sociological work according to their interests. Before the end of the academic year a research paper must be completed and accepted by the Department. (6 credits)

SOCIOLOGY N-494 (486)
Special Seminar A

Prerequisite: Sociology N-210. Registration by permission of the Department. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (6 credits)*NOTE C/See § 200.1*

SOCIOLOGY N-495 (487)
Special Seminar B

Prerequisite: Sociology N-210. Additional prerequisites may be added according to subject matter. Registration by permission of the Department. Subject matter will vary from year to year to

take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (6 credits) *NOTE C/See § 200.1*

SOCIOLOGY N-496 (408)
Special Seminar

Prerequisite: Permission of the Department. A student repeating Sociology N-494 or N-495 for a second time registers for credits under Sociology N-496.

SOCIOLOGY N-497 (488)
Special Seminar C

Prerequisite: Sociology N-210. Registration by permission of the Department. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (3 credits) *NOTE C/See § 200.1*

SOCIOLOGY N-498 (489)
Special Seminar D

Prerequisite: Sociology N-210. Additional prerequisites may be added according to subject matter. Registration by permission of the Department. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (3 credits) *NOTE C/See § 200.1*

SOCIOLOGY N-499 (409)
Special Seminar

Prerequisite: Permission of the Departmental. A student repeating Sociology N-497 or N-498 for a second time registers for credits under Sociology N-499. (3 credits)

41.27.4 PROGRAMMES (ANTHROPOLOGY)

60 BA Honours in Anthropology

Year I

6 Anth 211[6]
6* Ling N-221[6]
Int St/Geog N-341[6]
Int St/Anth N-333[6]
Soc 210[6]
6 Soc N-241[6], N-420[6], N-440[6], N-444[3], N-445[3], N-455[3], N-471[6]

Year II

6 Anth N-434[6]
12 Anth N-425[6], N-458[6], N-459[6], N-461[6]

Year II

6 Anth N-499[6]
12 Anth N-421[6], N-462[6], N-464[3], N-465[3], N-466[3], N-467[3], N-468[6]
6 Anth electives

**Students must take Soc N-210 in year I if they do not have CEGEP equivalent.*

42 BA Major in Anthropology

6 Anth N-211[6]
6 Ling N-221[6], Int St/Geog. N-341[6], Int St/Anth N-333[6]
Soc N-210[6]
6 Soc N-241[6], N-420[6], N-440[6], N-444[3], N-445[3], N-455[6], N-471[6]
6 Anth N-434[6]
6 Anth N-425[6], N-458[6], N-459[6], N-461[6]
6 Anth N-421[6], N-462[6], N-464[3], N-465[3], N-466[3], N-467[3], N-468[6]
6 Anth electives

30 Minor in Anthropology

12 Anth N-211[6], N-434[6]
18* *A*. Anth N-425, N-458, N-459, N-461
B. Anth N-421, N-462, N-464, N-465, N-466, N-467, N-468

**At least 6 credits must be chosen in Both A & B*

41.27.5 COURSE DESCRIPTIONS

ANTHROPOLOGY

Anthropology N-211 (211)
Introduction to Anthropology

This course deals with the evolution of man and his culture during prehistory, the differentiation of races, family and kinship structures in simple and complex societies, and the religious beliefs and practices of ancient and modern primitives in selected parts of the world. (6 credits) *NOTE A/See § 200.1*

ANTHROPOLOGY/INTERDISCIPLINARY STUDIES N-333 (333)
Introduction to Archaeology

An introduction to the archaeology of the ancient civilizations of the Mediterranean world. Special emphasis will be given to the methodological approach to archaeology. (6 credits) *NOTE A/See § 200.1*

ANTHROPOLOGY N-421 (421)
Peoples and Cultures of Africa

Prerequisite: Anthropology N-211 or its equivalent. A study of the development of traditional cultures in sub-Saharan Africa. Emphasis will be upon the interrelations of techno-economic, social structural and ideological aspects, with considerable attention to recent and prospective changes. (6 credits)

ANTHROPOLOGY N-425 (434)
Magic, Science and Religion

Prerequisite: Anthropology N-211 or Religion N-213. A comparative study of beliefs, ritual and ceremony in tribal, peasant and modern societies. Consideration of anthropological theories regarding the development and functions of supernaturalistic and naturalistic modes of thought. (6 credits)

ANTHROPOLOGY N-434 (451)
History of Anthropological Thought

Prerequisite: Anthropology N-211 or permission of the Department. A study of the major thinkers and schools of thought in cultural and social anthropology. (6 credits)

ANTHROPOLOGY N-458 (435)
Peasant Society and Culture

This course will examine the social, economic and political organization of peasant societies in Old and New World environments. It will include a discussion of problems of ideological, religious and artistic development and analyze tendencies toward proletarianization in the context of both external and internal forces. (6 credits)

ANTHROPOLOGY N-459 (460)
Anthropology of Conflict and Social Control

Prerequisite: Anthropology N-211 or its equivalent. Social conflict and mechanisms of control and resolution will be examined in a cross-cultural and historical perspective. Emphasis will be upon the origins and development of war and other

types of conflicts as they relate to the evolution of inequality. (6 credits)

ANTHROPOLOGY N-461 (461)
Kinship, Society and the State

Prerequisite: Anthropology N-211 or its equivalent. The comparative study of family, kinship, social strata and classes; the emergence of state organization. Materials will be drawn from a wide variety of cultural and historical contexts. (6 credits)

ANTHROPOLOGY N-462 (411)
Native Societies and Cultures of North America

Prerequisite: Anthropology N-211 or Sociology N-210. The principles of general anthropology applied in a survey course on the American Indians. The advent of man to America, including Eskimo; brief survey of Indian civilizations; present-day problems of Canadians and U.S. Indians and Eskimos. (6 credits) *NOTE A/See § 200.1*

ANTHROPOLOGY N-464 (464)
Peoples and Cultures of India

Prerequisite: Anthropology N-211 or its equivalent. This course will deal with the development of these cultures from their earliest manifestation to the present. Emphasis will be upon the interrelations of techno-economic, social, structural and ideological aspects, with considerable attention to recent and prospective changes. (3 credits)

ANTHROPOLOGY N-465 (465)
Chinese Culture and Society

Prerequisite: Anthropology N-211 or its equivalent. This course will deal with the development of these cultures from their earliest manifestation to the present. Emphasis will be upon the interrelations of techno-economic, social structural and ideological aspects, with considerable attention to recent and prospective changes. (3 credits) *NOTE A/See § 200.1*

ANTHROPOLOGY N-466 (466)
Peoples and Cultures of Japan and Korea

Prerequisite: Anthropology N-211 or its equivalent. This course will deal with the development of these cultures from their earliest manifestation to the present. Emphasis will be upon the interrelations of techno-economic, social structural and ideological aspects, with considerable attention to recent and prospective changes. (3 credits)

ANTHROPOLOGY N-467 (467)
Peoples and Cultures of Southeast Asia

Prerequisite: Anthropology N-211 or its equivalent. This course will deal with the development of these cultures from their earliest manifestation to the present. Emphasis will be upon the interrelations of techno-economic, social structural and ideological aspects, with considerable attention to recent and prospective changes. (3 credits)

ANTHROPOLOGY N-468 (468)
Black Society in the New World

Prerequisite: Anthropology N-211 or its equivalent. An inquiry into the similarities and diversities of Black Society in the Americas. Special emphasis upon the origin and development of the plantation system as the major context for the evolution and current position of Black Society. (6 credits)

ANTHROPOLOGY N-494 (486)
Special Seminar

Prerequisite: Six credits in Anthropology or permission of the Department. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (6 credits) *NOTE C/See § 200.1*

ANTHROPOLOGY N-495 (487)
Special Seminar

Prerequisite: Permission of the Department. A student repeating Anthropology N-494 for a second time registers for credits under Anthropology N-495. (6 credits)

ANTHROPOLOGY N-497 (488)
Special Seminar

Prerequisites: Twelve credits in Anthropology or permission of the Department. Subject matter will vary from year to year to take advantage of the special interests of the seminar leader. This course will provide opportunities to senior students for discussion and advanced study. (3 credits) *NOTE C/See § 200.1*

ANTHROPOLOGY N-498 (489)
Special Seminar

Prerequisite: Permission of the Department. A student repeating Anthropology N-497 for a second time registers for credits under Anthropology N-498. (3 credits)

51 Loyola Faculty of Arts and Science

51.1 Loyola Faculty of Arts & Science

Dean
RUSSELL W. BREEN
Assistant Dean (Curriculum)
SEAN E. McEVENUE
Assistant Dean (Faculty)
ROBERT H. PALLEN
Assistant Dean (Students)
EILEEN M. PRESTON

The Faculty of Arts and Science offers programmes leading to a BA or a BSc. The Faculty is organized in three areas: Humanities, Natural Science, and Social Science. There is further an Interdisciplinary Centre, with its own programmes, which operates within each of the areas and between them.

The Humanities Area groups the following departments: Classics, Communication Arts, English, French Studies, History, Interdisciplinary Studies, Modern Languages and Linguistics, Philosophy, Theological Studies. It also offers programmes in Library Science.

The Natural Science Area groups the following departments: Biology, Bio-Physical Education, Chemistry, Computer Science, Geology (and Geography), Interdisciplinary Studies, Mathematics, Physics, Psychology. It also offers programmes in Community Health Sciences and Nursing.

The Social Science Area groups the following departments: Economics, Interdisciplinary Studies, Political Science, Psychology, Sociology. It also offers a programme in Andragogy.

In the three areas, the Faculty offers a variety of programmes to meet the varied needs, interests, and goals of students.

The following pages describe the various programmes offered department by department. Students intending to register in a programme should consult with the relevant department.

It may be helpful to have a general definition of the terms as they are used in Quebec, and applied in Concordia.

Credit: One credit represents 45 hours of student work, either in lectures, labs or study. A typical 1-semester course will give 3 credits: 3 hours of lecture per week plus 6 hours of personal work per week, over a 15-week period.

Honours: A programme which consists of a *minimum* of 60 credits in a discipline or field, with superior performance being required to enter and remain in the programme, the precise level of such performance to be determined by Senate. It is recognized that "field" may be interpreted as two separate disciplines having a rational relationship (e.g. Philosophy and Religion) or an interdisciplinary field (e.g. Urban Studies). In most cases students who wish to pursue graduate studies will require an Honours programme.

Specialization Programme: A programme which consists of a *minimum* of 60 credits in a discipline or field, without a performance requirement. Students who are interested in subsequent "classification" by the Government may be advised to take a Specialization or Honours programme.

Major: A programme which consists of a *minimum* of 36 credits in a discipline or field. A Major provides solid preparation in a chosen area.

Minor: A programme which consists of a *minimum* of 24 credits in a single discipline. A Minor Programme should provide the student with a basic introduction to a chosen area, and introduce him to the methodology and key insights proper to that area.

Certificate: A programme which consists of a *minimum* of 30 credits.

Combinations of Major and Minor programmes and of Certificates are possible. However, no Bachelor degree will be granted without a major concentration in some area.

Some departments offer joint Honours Programmes, and joint Specialization Programmes.

51.2 Admission Requirements

General requirements are listed in § 13. Specific requirements for admission to the various programmes leading to the degree of Bachelor of Arts and Bachelor of Science are listed below. Students lacking one or more of these prerequisites may be admitted but they must include these courses in their undergraduate programme towards which they will be credited.

Course Designations:

A *Three credits first term*
F *Six credits (accelerated) in the first term only*
B *Three credits second term*
S *Six credits (accelerated) in second term only*
Y *Three credits extended over the entire year*
Z *Six credits over two terms*
C *Given in summer session only*

NOTE: The superscript on a course number represents its credit value.

For a more precise timetable students are advised to refer to the Registration Handbook issued at Registration.

	CEGEP Requirements	**Loyola Equivalents**
Bio-Chemistry	2 Chem 1 Bio 2 Math 2 Phy	Chem 112, Bio 230, Math 133, 135, Phy 101
Biology	2 Chem 1 Bio 2 Math 2 Phy	Chem 112, Bio 230, Math 133, 135, Phy 101
Bio-Physical Education	2 Chem 1 Bio 2 Math 2 Phy	Chem 112, Bio 230, Math 133, 135, Phy 101
Chemistry	2 Chem 2 Math 2 Phy	Chem 112, Math 133, 135, Phy 101
Community Nursing	R.N.	
Computer Science	4 Math 3 Phy One of the following: 2 Chem 1 Bio 2 Comp Sc	Math 133, 135, 231, 233, Phy 101 One of the following: Chem 112, Bio 230, Comp Sc 211, 241
Geology	2 Chem 2 Math 2 Phy	Chem 112, Math 133, 135, Phy 101
Mathematics (BSc)	2 Chem 4 Math 2 Phy	Chem 112, Math 133, 135, 231, 233, Phy 101
Physics	2 Chem 2 Math 2 Phy	Chem 112, Math 133, 135, Phy 101
Psychology (BSc)	2 Chem 2 Math 2 Phy	Chem 112, Math 133, 135, Phy 101

All programmes leading to a BA require the D.E.C. only, except for Mathematics (BA) which has 4 Mathematics prerequisites.

51.3 Department of Biology

Associate Professor and Chairman
R. T. CRONIN, S.J.

Professor
S. P. DRUMMOND, S.J.

Associate Professor
K. S. DHINDSA

Assistant Professors
P. ALBERT
C. BECKMAN
N. N. KAPOOR
B. S. MANGAT
J. D. McLAUGHLIN
R. G. OMRAN
P. WIDDEN

51.3.1 PROGRAMMES

90	**BSc Honours in Biology**
	Year I
12	Bio 310Z[6], 320Z[6]
3	Bio Elec
6	Chem 326A[3], 328B[3]
3	Math 301A/B[3]
6	Elec
	Year II
15	Bio 410Z[6] or 440Z[6]; 430Z[6], 435A[3]
9	Bio Elec
6	Elec
	Year III
6	Bio 590Z[6]
18	Bio Elec
6	Elec

108	**BSc (Old) Honours in Biology**
	(for those registered prior to 1975)
	Year I
12	Bio 310Z[6], 320Z[6]
6	Bio Elec
6	Chem 326A[3], 328B[3]
3	Math 301A/B[3]
3	Sc Elec
6	Non-Sc Elec
	Year II
12	Bio 410Z[6] or 440Z[6]; 430Z[6]
12	Bio Elec
6	Sc Elec
6	Non-Sc Elec
	Year III
6	Bio 590Z[6]
18	Bio Elec
6	Sc Elec
6	Non-Sc Elec

90	**BSc Specialization in Biology**
	Year I
12	Bio 310Z[6], 320Z[6]
3	Bio Elec
6	Chem 326A[3], 328B[3]
3	Math 301A/B[3]
6	Elec
	Year II
15	Bio 410Z[6] or 440Z[6]; 430Z[6], 435A[3]
3	Bio Elec
12	Elec
	Year III
18	Bio Elec
12	Elec

90	**BSc (Old) Major in Biology**
	(for those registered prior to 1975)
	Year I
12	Bio 310Z[6], 320Z[6]
6	Bio Elec
6	Chem 326A[3], 328B[3]
3	Math 310A/B[3]
3	Non-Sc Elec
	Year II
12	Bio 410Z[6] or 440Z[6]; 430Z[6]
6	Bio Elec
6	Sc Elec
6	Non-Sc Elec
	Year III
18	Bio Elec
6	Sc Elec
6	Non-Sc Elec

36	**Joint-Major component Biology**
27	Bio Elec (chosen according to the other Major)
6	Chem 326A/B[3], 328A/B[3]
3	Math 301A/B[3]

36	**Major-Minor in Biology**
27	Bio 310Z[6], 320Z[6]; 410Z[6] or 440Z[6]; 430Z[6], 435A[3]
6	Chem 326A/B[3], 328A/B[3]
3	Math 301A/B[3]

24	Minor in (science) Biology
12	Bio 310Z[6], 320Z[6]
12	Bio Elec

24	Minor in (science) Zoology
6	Bio 320Z[6]
18	Bio Elec (in Zoology, 6 of which may be general)

24	Minor in (non-science) Biology
24	Bio 300Z[6], 304Z[6], 331A[3], 333B[3], 335A/B[3], 341A[3]

24	Minor in (science) Botany
6	Bio 310Z[6]
18	Bio Elec (in Botany, 6 of which may be general)

51.3.2 DEPARTMENT OF BIOLOGY

Bachelor of Science Degree.

Students registering for the BSc in this Department should have the CEGEP Diploma in Science, or its equivalent, including one course in biology, and two each in chemistry, physics and mathematics.

To complete the requirements for the BSc, they will take a minimum of 90 credits. Each credit represents a minimum of 45 hours, spread across the total activity of lectures, laboratories, seminars and private study. Sixty (60) of these must be taken from courses offered by this Department.

Programmes

Students will register in the program of their choice, after consultation with members of the Department faculty and approval of the Department Chairman.

The Department offers the following programmes:

Specialization — consists of a minimum of 60 credits, including a *core* of 48 credits and 12 elective credits from specialized areas. The remaining 30 credits may be elected from any department and any faculty.

Honours — consists of a minimum of 72 credits, including a *core* of 48 credits and 24 elective credits from specialized areas. The remaining 18 credits may be elected from any department and any faculty. Students must obtain a minimum of 'B' (65%) in all courses of the basic programme and an overall average of 'B' in the total programme. Honours standing will be reviewed annually; candidates may enter upon first registration or before beginning the final 60 credits.

Joint-Major Component — consists of a minimum of 36 specified credits; a further 36 specified credits will be taken in another department, and the remaining 18 from any department and any faculty. A joint programme may be arranged upon consultation with the respective faculty members and approval of the respective chairmen involved.

Major-Minor — consists of a minimum o 36 specified credits; a further 24 specified credits will be taken in another department, and the remaining 30 credits from any department and any faculty. Prior consultation with and approval of the departments involved is required. Any existing prerequisites must be satisfied.

Minor — consists of 24 specified credits, taken in conjunction with programmes in other departments or faculties. Any existing prerequisites must be satisfied. Prior consultation for guidance and approval is indicated.

51.3.3 COURSE DESCRIPTIONS

BIOLOGY 230Z
Introduction to Biology

Prerequisite: Chem 112Z or equivalent. An introductory course encompassing the fundamentals of both plant and animal biology, from the cellular to the phylogenetic levels, and embracing the broader interrelationships of all living organisms and their environments. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 300Z
Fundamentals of Human Biology
(also given as Health Education 300 § 121.5.3)

Prerequisites: None. A series of lectures, demonstrations and seminars designed to provide non-biologists with a general survey of the fundamental principles of life, with special emphasis on the structures and functions of man. *Lectures:* 3 hours per week for two terms. (6 credits)

BIOLOGY 304Z
Concepts of Modern Biology

Prerequisites: None. Designed for those with little or no knowledge of biology, this course will introduce non-science students to the diversity of plant and animal life, and to the basic functions of living organisms in relation to environment, reproduction, heredity and evolution. *Lectures:* 3 hours per week for two terms. (6 credits)

BIOLOGY 310Z
General Botany

Prerequisites: CEGEP sciences. A basic study

of the morphology, anatomy and functions of selected plant groups. Fundamental concepts of growth and development of higher plants. Plant nutrition, photosynthesis and respiration. Classification and geographical distribution of plants. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits.)

BIOLOGY 315A
Microbiology I

Prerequisites: CEGEP sciences. Introduction to micro-organisms. History of microbiology. Structure of viruses, bacteria and fungi. Taxonomy of micro-organisms. Brief discussion of genetics of micro-organisms. Laboratory will illustrate lecture material and introduce methods of handling micro-organisms. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 317B
Microbiology II

Prerequisite: Bio 315A. Designed to continue from Bio 315A. Growth, nutrition and metabolism of micro-organisms. Special emphasis on metabolic processes unique to micro-organisms (fermentations, oxidation of inorganic compounds, anaerobic respiration, microbial photosynthesis). Their importance in medicine and industry, and their role in biogeochemical processes. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 320Z
General Zoology

Prerequisites: CEGEP sciences. A basic study of the morphology and physiology of a selected series of invertebrate and vertebrate animals together with elements of cytology, genetics, evolution, ecology and the geographical distribution of animals. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 327A
Entomology I

Prerequisites: CEGEP sciences. This course introduces the student to the variety and complexity of insect life. Basic classification is followed by a more detailed study of morphology and anatomy, together with some physiological considerations, including growth and metamorphosis. Other topics such as adaptations for aquatic life, social behaviour, etc. will also be discussed. Laboratories will begin with a field trip, the object of which will be to observe and collect various insect species. The remainder of the lab sessions will complement the lectures. Students are advised to begin an insect collection during the summer months preceeding the course. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 329B
Entomology II

Prerequisite: Bio 327A. To the initiated student, this course will present an in-depth study of insect behaviour. Topics will include sensory physiology, insects and plants, light and sound production, population dynamics, insect ecology, etc. An attempt will be made throughout the course to establish a web of interrelationships between the structures and functions of various insect parts. Laboratories will involve the use of live animals and the student may be required to spend additional time for certain experiments. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 331A
Environmental Biology I

Prerequisites: None. This course presents, for the general student body, the principles and concepts underlying the relations between living organisms and their environments (energy flow and nutrient cycling in ecosystems, population dynamics and community organization). *Lectures and tutorials:* 3 hours per week for one term. (3 credits)

BIOLOGY 333B
Environmental Biology II

Prerequisites: None. Designed to follow Bio 331A, the course considers both natural and man-made ecological problems, including various aspects of pollution, resource and waste control vital for human survival as well as man's socio logical responsibilities. *Lectures, seminars and tutorials:* 3 hours per week for one term. (3 credits)

BIOLOGY 335A/B
Elementary Genetics

Prerequisites: None. A survey of classical and contemporary developments in the study of heredity with particular attention to human examples. *Lectures:* 3 hours per week for either term. (3 credits)

BIOLOGY 341A
Fundamental Nutrition

Prerequisites: None. This course deals with food composition (including vitamins, minerals), its absorption and utilization, the roles of excesses, stress, microbes, toxins, preservatives, residues, drugs, food technology and diets, malnutrition, obesity, aging and other topics. Laboratory will include seminars, movies and projects, field trips. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 343B
Applied Nutrition

Prerequisite: Bio 341A. This course describes the needs of individuals in different stages of development, with particular emphasis on current problems in human nutrition. Identification of sources of food-borne diseases and methods of prevention and control will also be treated. Laboratory will include group discussion, speakers, movies, projects. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 410Z
Plant Physiology

Prerequisite: Bio 310Z. A study of vital plant processes with emphasis on the metabolism of carbo-hydrates, proteins and lipids (membrane characteristics and permeability, enzymes, light and photosynthesis, respiration and fatty-acid oxidation) laboratory experiments cover a broad spectrum of basic physiological concepts and techniques: calorimetry, chromatography, extraction analyses, etc. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 415A
Biology of Non-vascular Plants

Prerequisite: Bio 310Z. A survey of the taxonomy, morphology, life cycles and evolution of representatives of the lower plants (algae, mosses, liverworts). *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 417B
Biology of Vascular Plants

Prerequisite: Bio 310Z. Designed to follow Bio 415A, the course surveys the taxonomy, morphology, life cycles and evolution of the higher plants (ferns, seed plants). *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 420Z
Comparative Vertebrate Anatomy

Prerequisites: Bio 320Z or equivalent. A comprehensive study of the development and structure of the systems of a representative series of vertebrates from a comparative and evolutionary point of view, with emphasis on the mammals. Labo-

ratory: survey and dissection of representatives of the principal vertebrate classes. *Lectures:* 3 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 422Z
Invertebrate Zoology

Prerequisite: Bio 320Z or equivalent. A comprehensive survey designed to provide a detailed understanding of form and function within the invertebrate phyla. Additional topics will include a discussion of current evolutionary theories regarding invertebrates, reproductive and social behaviour, and ecology, especially that of local fauna. *Lectures:* 2 hours per week for two terms. *Laboratory:* 4 hours per week for two terms, and a Fall field trip. (6 credits)

BIOLOGY 424Z
Vertebrate Embryology

Prerequisite: Bio 320Z. A detailed study, from a comparative point of view, of the developmental processes and organogenesis in representative vertebrate embryos, leading to an understanding of the structure and function of the human systems. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

Biology 430Z
General Genetics

Prerequisites: Bio 310Z, 320Z. A study of the principles and processes of plant, animal and human heredity from the classical foundations through the modern to the recent molecular developments; developmental and population genetics, and evolution. Laboratory: directed experiments with Drosophila and other organisms. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3-6 hours per week for two terms. (6 credits)

BIOLOGY 431A
Cytology

Prerequisites: Bio 310Z, 320Z or permission of the Instructor. A study of plant and animal cells, their ultrastructures and organelles, and physiology, with microscopic and cytochemical techniques of analysis. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 433B
Cytogenetics

Prerequisites: Bio 431A, 430Z or permission of the Instructor. A detailed study of plant and animal chromosomes, their structures and normal and abnormal behaviour; species evolution and preservation; various anomalies, ploidy, heterosis, apomixy; human cytogenetics. *Lectures:* 2 hours per week for one term. *Laboratory:* 4-6 hours per week for one term. (3 credits)

BIOLOGY 434Z
Ecology

Prerequisites: Bio 310Z, 320Z. A broad survey of theoretical ecology. Description of communities, their structures and functions, succession and climax. The ecosystem concept, energy flow and nutrient cycling within the ecosystem. Growth and regulation of populations. Interaction of the environment with populations and communities. Competition and the niche concept; systems analysis in ecosystems studies. *Lectures:* 2 hours per week for two terms. *Laboratory:* directed projects and field trips. (6 credits)

BIOLOGY 435A
Cellular Metabolism I

Prerequisites: Bio 310Z, 320Z; Chem 326A, 328B. The course will deal with the simple metabolism of biomolecules in both plants and animals. A basic study of enzymes and their mode of action; nucleic acids and their role in protein synthesis. Distribution of organelles and their metabolism; cellular oxidations and energetics. *Lectures:* 3 hours per week for one term. (3 credits)

BIOLOGY 437B
Cellular Metabolism II

Prerequisite: Bio 435A. Designed to follow Bio 435A, the course examines the intracellular localization of enzymes, their activity and control from a comparative cellular basis; coenzymes and their importance in intermediary metabolism. Membranes and cell wall synthesis; hormones and their mode of action. Nutritional requirements of organisms. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 440Z
Animal Physiology

Prerequisite: Bio 320Z or permission of the Instructor. An integrated study of basic physiological phenomena of the vertebrate body, with emphasis on the human. The topics discussed include muscle function, nervous system, circulation, respiration, temperature regulation, digestion, metabolism, excretion, and endocrinology. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 461C
Plant Field Ecology

Prerequisite: Bio 310Z. For a two week period during August this course will be held at the Lacolle Center. It will involve identification of local plant species, methods of sampling of communities, and examination of the pattern of plant communities in the area. Handling of data on populations and communities will be discussed as well as statistics on population distributions. A mixture of formal lectures, organized field studies and informal discussion. Students will be required to hand in a written report after the course has ended. (3 credits)

BIOLOGY 511A
Mycology

Prerequisite: Bio 315A. A detailed study of the morphology and taxonomy of the fungi. Emphasis will be placed on the ecological roles of various groups of fungi and on their economic importance; problems of phylogeny will also be discussed. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term, including field trips. (3 credits)

BIOLOGY 513B
Microbial Ecology

Prerequisite: Bio 315A. The course is designed to give an understanding of the environment in which microorganisms live, the structure of microbial communities, and the ways in which microbes interact during the processes involved in decomposition and nutrient cycling. Stress will be placed on the ecology of soil microorganisms, though aquatic communities will also be discussed. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term, including field trips. (3 credits)

BIOLOGY 515A
Plant Growth and Development

Prerequisite: Bio 410Z. Environmental approach to the study of plant growth, differentiation and morphogenesis; hormones and growth regulation; physiology of reproduction, maturation and senescence; temperature and light responses and related phenomena. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 517B
Environment and Plant Growth

Prerequisites: Bio 310Z. Examination of the response of selected plant groups to different environmental conditions. Studies will include particular plant responses to changes in temperature and light, water and mineral deficiencies. *Lectures:* 2 hours per week for one term. *Laboratory:* individual projects and seminars. (3 credits)

BIOLOGY 522Z
General Parasitology

Prerequisites: Bio 320Z or equivalent, Bio 422Z recommended. A study of the protozoan, helminth and arthropod parasites of man, domestic animals and wildlife. Special emphasis will be placed on the transmission of parasites with reference to the behaviour and ecology of both the host and the parasite. Additional topics will include the evolution of the parasitic way of life, subsequent adaptations and various aspects of the host-parasite relationship. Laboratory: techniques for parasite recovery, basic staining and histological techniques, fecal analysis, identification of parasitic worms, infection of experimental animals. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 524Z
Neurology

Prerequisite: Bio 420Z. A study of the anatomy and physiology of the nervous systems of vertebrates especially of the mammals and man. *Lectures:* 2 hours per week for two terms. *Laboratory:* 3 hours per week for two terms. (6 credits)

BIOLOGY 527A
Histology

Prerequisite: Bio 420Z or equivalent or permission of the instructor. A comparative study of the microscopic characteristics of cells, tissues and organ systems of the vertebrates at the histological and cellular levels. *Lectures:* 2 hours per week for one term. *Laboratory:* 3 hours per week for one term. (3 credits)

BIOLOGY 529B
Microscopical Techniques

Prerequisite: Bio 527A. Histological techniques involved in the preparation of various animal tissues for microscopic study; techniques of microscopy and some practical experience in photomicrography. *Lectures:* 1 hour per week for one term. *Laboratory:* 6 hours per week for one term. (3 credits)

BIOLOGY 531A/B
Advanced Genetics

Prerequisite: Bio 430Z. Directed readings and seminars in classical and contemporary genetics; designed to expose the student to research literature and problems, to probe in greater depth areas of particular interest, to develop a critical sense and deepen an understanding of past and current work in this field. *Seminars:* 3 hours per week for either term. (3 credits)

BIOLOGY 542Z
Comparative Animal Physiology

Prerequisites: Bio 440Z or equivalent. Bio 437B or equivalent Biochemistry, or permission of the Instructor. The course is designed on a function-system basis, and deals with a comparative study of physiological processes in animals, their behaviour and physiological adaptations. *Lectures and seminars:* 2 hours per week for two terms. *Laboratory:* individual projects in special topics. (6 credits)

BIOLOGY 565A
Limnology

Prerequisite: Bio 434Z. A survey course covering physical and chemical properties of freshwater, the biotic communities of lakes and running water. *Lectures:* 3 hours per week for one term. (3 credits)

BIOLOGY 567B
Fish Biology

Prerequisite: Bio 420Z. A study of the physiological and anatomical characteristics of fish, their feeding and mating behaviour, and special adaptations. *Lectures:* 3 hours per week for one term. (3 credits)

BIOLOGY 590Z
Problems in Biological Research

Prerequisite: candidacy for the Honours degree. Lectures and seminars on methods of researching scientific literature, the planning, conduct, writing and reporting of research. The core of the course will be a project selected by the student in consultation with and conducted under the supervision of a faculty member of the department (6 credits)

51.4 Department of Bio-Physical Education

Assistant Professor and Chairman
E. F. ENOS

Assistant Professors
WM. SELLERS
R. SWEDBURG
A. WRIGHT

Lecturers
P. ARSENAULT
P. BOLAND

Visiting Lecturers
D. MULDER F.R.C.S.
J. SULLIVAN F.R.C.S.

51.4.1 PROGRAMMES

90 B.Sc. (Specialisation in Bio-Physical Education)

Year I
12 Bio-PE 301A[3], 311A[3], 313B[3], 361Y[3]
12 Bio 320Z[6], Chem 326Z[6]
6 Elec.

Year II
21 Bio-PE 410Z[6], 431A[3], or 433B[3], 451A[3], 453A[3], 455B[3], 457[3]
9 Elec.

Year III
27 Bio-PE 501B[3], 511A[3], 512Z[6], 521A[3], 551B[3], 553A[3], 560Z[6]
3 Elec.

Health Education

The courses listed below are offered through the Department of Bio-Physical Education in conjunction with the Department of Community Nursing and certificate programme in Community Services. § 121.5
Bio-PE 513B[3], 533A[3], 534Z[6], 630Z[6], 632Z[6], 642Z[6]

Outdoor Education Programme

The courses listed below are open to students with advanced academic standing, teachers, recreation specialists, camp directors and other professionals.
Bio-PE 470Z[6], 570Z[6], 670Z[6]

Institute of Comparative Physical Education

The courses listed below are offered through Institute of Comparative Physical Education. They are open to students with advanced standing, teachers, recreation directors, sports administrators, coaches and other experienced professionals.
Bio-PE 600Z[6], 610Z[6], 620Z[6]

Recreation and Leisure Studies

Courses offered by the Department of Bio-Physical Education in Recreation and Leisure Studies are listed below:
A BA program in Recreation and Leisure Studies may be followed through the Center for Interdisciplinary Studies. 51.16.5
24 Bio-PE 341A[3], 361Y[3], 433B[3], 441B[3], 526Z[6], 560Z[6]
24 Elec from the following:
Bio-PE 311A[3], 313B[3], 410Z[6], 470Z[6], 501B[3], 512Z[6], 531B[3]

51.4.2 COURSE DESCRIPTIONS

BIO-PHYSICAL EDUCATION 291A
Sports Science

A cross-sectional approach in which biological, sociological, psychological and philosophical aspects are synthesized for a more complete understanding of man and his behaviour. Topics will include: Biological Perspective (Man's Biological structure and function as related to and influenced by experience in physical activities); Philosophical Perspective (Evidence of contemporary philosophic position in various statements of the role and the value of physical activities on man's functioning and development). Psychological Perspective (Factors which affect man's behaviour in activity); and Sociocultural Perspective (An investigation of physical activities, as they influence and reflect social processes, organizations and valuation; the influence and social-cultural factors of man as he participates in physical activity.) Lectures: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 301A
Philosophical and Sociological Foundations of Health, Physical Education and Recreation

The course involves a study of the nature and meaning of health, physical education and recreation. Significant effects of philosophical tenets on the development of the disciplines are examined. Subject to critical analyses are the basic concepts of the philosophical schools of idealism, pragmatism and realism. The socializing effects of sports, physical education and recreational activities also are investigated. Lectures, Seminars & Field Study: 3 hours per week. (3 credits).

BIO-PHYSICAL EDUCATION 311A
Introduction to Motor Learning

The course commences with a brief introduction to statistical methodology. Consideration is given to the capacities people have for processing information. It attempts to demonstrate how these capacities influence performance, the acquisition of skills and, in particular, sports skills. Also considered are the effects of the following factors: decision making, information theory, reaction time, psychological refractory period, selective attention, memory and others. Lectures: 2 hours per week. Labs: 2 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 313B
Motor Learning and Human Performance

Prerequisite: Bio-PE 311A or consent of professorial staff. The principle aim of this course is to examine in more depth the topics of learning. Major consideration is given to the effects that feedback and manipulation may have on the acquisition and improvement of sports skills in the performance. Lectures: 2 hours per week. Labs: 2 hours per week (3 credits)

BIO-PHYSICAL EDUCATION 341B
Recreation and Leisure in Contemporary Society

The course provides a basis for understanding recreation and leisure as increasingly important aspects of our culture. In an era of rapidly changing life styles, with a high incidence of anxiety and frustration, the value of worthy use of leisure time in maintaining mental and physical health is presented. Topics discussed include: Education for leisure, the scope of the field of recreation, work ethicleisure ethic, the role of leisure and recreation in satisfying man's needs and leisure as an agent for change. Lectures & Seminars: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 361Y
Principles and Techniques of Physical Education and. Recreation Skills

An understanding is provided of skill development theories, practices and teaching sequences. Scientific principles of sport techniques are applied in activity periods. All popular North American team and individual sports are covered. To successfully complete the course, students must demonstrate a proficiency which will permit them to teach the skills involved in these sports. Labs: 12 hours per week (3 credits)

BIO-PHYSICAL EDUCATION 410Z
Methods and Materials in Physical Education and Recreation

Prerequisite: 311A, 313B, 361Y. In the course teaching is approached as a science. Consideration is given to the needs, interests and characteristics of elementary school age children. Based on this, scientific teaching methods and materials most conducive to learning for this age group are examined. The latest modes of movement education are of major concern. Basic skills and the teaching sequences involved are reviewed. During laboratory sessions, students are afforded the opportunity to teach children and to analyze the effects of various methodological techniques. Lectures: 2 hours per week. Labs: 3 hours per week. (6 credits).

BIO-PHYSICAL EDUCATION 431A
Health Science

The subject matter is approached with "Health" viewed as the optimal functioning of the human organism. The course synthesizes and applies knowledge from biological, psychological and medical sciences to present the student with a comprehensive understanding of personal and community health. Areas covered include hereditary factors, growth and development, nutrition fitness, mental and emotional functions, drugs, epidemiology, pathology and environmental ecology. (3 credits)

BIO-PHYSICAL EDUCATION 433B
Personal and Community Health Problems

The course examines causes, symptoms and proposes plausible steps which can be taken towards solving individual and community health problems. Consideration is given to alcoholism, drug abuse, mental illness, smoking, sex education, communicable and non-communicable diseases, pollution, industrial and occupational health hazards. Lectures & seminars: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 441B
Principles and Practices of Recreational Services

The course is concerned with the fundamental concepts governing the field of recreation. A thorough examination is conducted of the many aspects of recreation programs in urban and rural settings including: active and social components, principles of leadership, supervision, evaluation, surveying interests, classification, co-ordination and other planning factors. Model recreational programs are surveyed in community, camp, school and rehabilitation centres. Lectures, Seminars & Field Study: 4 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 451A
(Also given as Health Education 303 § 121.5.3)
Structural Human Anatomy

The course is a study of gross and functional anatomy, with major emphasis on the skeletal, muscular and nervous systems. Lectures: 2 hours per week. Labs and cadaver demonstrations: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 453A
Human Physiology

Prerequisites: Biol. 320Z and a University level chemistry course. The course analyzes the functional and integration of the muscular system and of the nervous and hormonal systems controlling movement in man. Due to the close relationships, the special senses and the reproductive systems also are examined in this course. Lectures: 2 hours per week. Labs: 2 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 455B
(Also given as Health Education 311 § 121)
Systematic Human Anatomy

Prerequisite: Bio-PE 451A. The course is a study of the organ systems of the human body with major emphasis on the circulatory, respiratory, digestive, excretory, reproductive and endocrine systems. Lectures: 2 hours per week. Labs: and cadaver demonstrations: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 457B
Cardiovascular — Respiratory Physiology

Prerequisite: Bio-PE 453A. The major concern of the course is to examine the functional organization and integration of the cardiovascular and respiratory systems which provide nutrients for man's energy metabolism. Related to this, the dynamics of metabolism processes, digestive and excretory systems also are analyzed. Lectures: 2 hours per week. Labs: 2 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 470Z
Scientific Foundations of Outdoor Education and Recreation

The course examines outdoor recreational facilities and other outdoor settings as an extension of the school. Their utilization is studied in terms of providing direct laboratory experiences for building concepts and developing a concern about man and his natural environment. The areas of health, physical education and recreation are used as the core of an interdisciplinary study of the outdoors. Subject to review are principles and techniques of: health, physical education and recreation including the effects of pollution, recreational and outdoor fitness activities; environmental science including conservation; ecology of a woodland, pond and bog; study of plants and animals in their natural habitat; water resources; problems of erosion; rock and tree identification. Lectures: Labs: Seminars & Field Study: 5 hours per week (6 credits)

BIO-PHYSICAL EDUCATION 501B
Adapted Corrective and Rehabilitative Physical Education and Recreation

Programmes and activities for individuals with physical, mental, social and/or emotional dysfunctions are analyzed in the course. An exploration is conducted of the nature and causes of common handicaps including orthopaedic, cardiopathic, visual, auditory, mental retardation, cerebral palsy and general learning disabilities. Current adaptive, corrective and remedial techniques are reviewed in laboratory sessions, students are provided with the opportunity to teach special activities and exercises to handicapped children. Lectures: 2 hours per week. Labs: 2 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 511A
Tests, Measurements and the Research Processes in Physical Education and Recreation

Prerequisites: Bio-PE 410Z and a Post Secondary School Math Course, preferably Math 310Z. The course provides an understanding of standardized tests utilized by professionals in the fields of health, physical education and recreation. Procedures involved in data collection, interpretation and statistical methodology are analyzed. Lectures: 3 hours per week. Labs: 2 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 512Z
Advanced Methods and Materials in Physical Education and Recreation

Prerequisite: Bio-PE 410Z. Teaching is approached as a science. Consideration of the needs, interests and characteristics of adolescents and young adults are studied. Based on these factors, analyses of appropriate teaching methods for this age group are conducted. Advanced skills and the teaching sequences involved are reviewed. The application of principles of motor learning, skill testing, cinematography, closed-circuit television and other audiovisual aids in teaching and coaching are considered. In laboratory periods, students are given the opportunity to teach adolescents and young adults and to study the effect of various methodological techniques. Lectures: 2 hours per week. Labs: 3 hours per week. (6 credits)

BIO-PHYSICAL EDUCATION 513B
(Also given as Nursing 513A/B & Community Services 513 § 121.5.3)
Methods and Techniques of Teaching Health

Lectures and practice in instruction of small and large groups. Emphasis will be on effective communication of health information to individuals and groups. Utilization of audio-visual aids in a variety of situations. (3 credits)

BIO-PHYSICAL EDUCATION 521A
Organization and Administration of Physical Education and Recreation Programmes and Facilities.

The course examines and applies fundamental concepts of business administration to the field of physical education and recreation. Topics covered include organizational structures, management systems, equipment purchasing and control, promotion, public relations, theories of motivation and scheduling which can be applied in the school and community. Lectures and Seminars: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 526Z
Organization and Administration of Recreation Programmes and Facilities.

The course provides in-depth analysis of business practices utilized in the efficient management of recreation programmes and facilities. Principles of organization, public relations, purchasing, scheduling, and utilization of facilities are studied. Special consideration is given to the financial areas of budget preparation, basic accounting procedures, cost estimation and the control of funds. The course includes an extensive field study programme in which the students are exposed to a variety of administrative procedures being used by professionals in the field of recreation. Lectures: 2 hours per week Field Study Labs: 4 hours per week. (6 credits)

BIO-PHYSICAL EDUCATION 531B
Preventive Medicine and Geriatrics

Prerequisites: Bio-PE 553A, the equivalent or consent of instructor. the course focuses on the physiological, psychological and sociological needs of adults, in particular, geriatric patients. The aging process is examined as it influences the choice of physical activities. In addition, the preventive aspect of physical activity and its effects on the medical problems associated with aging are studied. Methods of implementing and evaluating preventive programmes are analyzed. Disorders of the metabolic processes, neuromuscular, cardiovascular and respiratory systems receive prime consideration. Lectures: 2 hours per week. Labs: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 533A
(Also given as Community Services 401A/B § 121.5.3)
Drug Use and Abuse

The course is structured to introduce non-medical personnel to the modern concepts of drug therapeutics and to discuss the consequences of use and abuse of drugs. The drug classes will include steroids, antibiotics, minor and major psychotropics and the potential chronic abuse of drugs such as amphetamines, barbiturates, hallucinogens and alcohol. (3 credits)

BIO-PHYSICAL EDUCATION 534Z
(Also given as Community Services 300 & Nursing 300 § 121.5.3)
Nutrition in the '70's.

This course will study the influence of socio-economic and political systems on the nutritional status of the individual and the interrelationship between food habits and the cultural, social and psychological aspects of life. Topics will include diet related problems such as obesity, heart disease, faulty eating habits, malnutrition, etc. Food budgeting for all levels of the socio-economic structure will be examined. (6 credits)

BIO-PHYSICAL EDUCATION 551B
Kinesiology.

Prerequisites: Bio-PE 451A and a post secondary school physics course preferably Physics 351. The course involves a study of anatomical, mechanical and descriptive analyses of basic human movement and specific sport skills. Included is an examination of the skeletal, muscular and the nervous systems and their application to the teaching and coaching of efficient motor performance. Lectures: 2 hours per week. Labs: 2 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 553A
Physiology of Exercise.

Prerequisites: Bio-PE 455A and 457B. In the course, physiological principles are applied to man's acute and chronic adaptation to muscular

activities. The adaptation and integration of the body systems in the performance of exercise and sports activities are considered. Also examined are the changes that occur as a result of physical training, age and environment. Laboratory sessions include the measurement of various physiological parameters during exercise. Lectures: 2 hours per week. Labs: 3 hours per week. (3 credits)

BIO-PHYSICAL EDUCATION 560Z
Practicum

Prerequisite: The course is open only to University III level Bio-PE or Recreation majors. The practicum may take one of four forms; Paramedical internship, practice teaching, recreation internship or research study. In consultation with their mentors, students are given the opportunity to study theoretical and practical problems confronting professionals in the field. For students registering for the practice teaching section, the course provides direct teaching experience. The course offers those students registering for the para-medical or recreation internship sections a supervised period of work with a specialist in the field. The research study section involves undertaking an investigation and reporting on a topic under the direction of the student's major advisor. Each student, during seminar sessions, formulates a study proposal. The practicum commences, based upon the approved proposal, immediately following the student's last final examination. The course involves a minimum of a six-week, 240-hour period. (6 credits)

BIO-PHYSICAL EDUCATION 570Z
Outdoor Education in the Elementary School Curriculum.

The course offers a comprehensive analysis of outdoor education at the elementary school level. Examined are the aims and objectives of outdoor education, scientific methods and materials utilized, the organization and administration of model programs, innovative units of instruction and means of evaluation of outdoor education courses in camps, elementary schools and municipal recreation programs. Lectures, Labs, Seminars & Field Study: 5 hours per week. (6 credits)

BIO-PHYSICAL EDUCATION 600Z
Comparative Physical Education

Prerequisites: Minimum of a Bachelor degree in physical education, related field or consent of the professorial staff. The course compares systems of physical education from different cultural settings and thus aims to promote a further understanding of the discipline on a world-wide scale. The thematic structure of the study involves a four-dimensional comparative analysis of the following aspects of physical education: historical, philosophical and sociological perspectives; method and content of curricula for male and female students; the design of sport facilities; and current research. In addition, the course provides an independent study unit which enables a student to investigate and report on a subject of special interest. The aforementioned topics are examined in North America and selected countries. To analyze effectively the topic areas and to experience the socio-cultural factors involved, students travel to and study at selected sites. Labs and Activity periods: 75 hours of classes. (6 credits)

BIO-PHYSICAL EDUCATION 610Z
Physical Education in Europe.

Prerequisites: Minimum of a Bachelor degree in physical education, related field or consent of the professorial staff. The course examines current practices in selected European countries. Of major concern are methods and content of the physical education curricula for male and female students at the elementary, secondary and post-secondary levels in the countries selected. Considered are the influences of socialism in Eastern European countries and the impact of Laban, Ling, Jahn, Pestalozzi and Rousseau. In addition, the course provides an independent study unit which enables a student to research and study a subject of special interest. To analyze the aforementioned topics and to experience the socio-cultural factors which may influence them, students travel to and study in the selected countries. Lectures, Seminars, Field Study, Labs and Activity periods: 75 hours of classes. (6 credits)

BIO-PHYSICAL EDUCATION 620Z
Physical Education and Sport in the USSR.

Prerequisites: Minimum of a Bachelor degree in physical education, related field or consent of the professorial staff. The primary aim of the course is to provide a comprehensive overview of the Soviet system of physical education and the role of sports in a socialistic society. The course examines the physical education curricula in primary, secondary and post-secondary institutions for male and female students. Also studied are the organizational, philosophical and socio-cultural dimensions of their sports system. The Soviets' scientific teaching and coaching methods receive major emphasis. Surveyed is a sample of the most recent research in the USSR pertinent to athletic training and physical education. In addition, the course provides an independent study unit which enables a student to investigate and report on one of the above in greater depth or on a related subject of special interest. To study the aforementioned topics and to experience the socio-cultural factors which may influence them, students travel to and study in the USSR. Lectures, Seminars, Field Study, Labs and Activity periods: 75 hours of classes. (6 credits)

BIO-PHYSICAL EDUCATION 630Z
(Also given as Health Education 372 § 121.5.3)
Psychological Concepts of Human Sexuality as They Influence Family Planning and Sex Education.

Prerequisite: Open to educators, guidance counsellors, nurses, social workers, and psychologists. The study will explore variations in sexual patterning, therapy and counselling; biological, anthropological and ontological perspectives of sexuality. (6 credits)

BIO-PHYSICAL EDUCATION 632Z
(Also given as Health Education 400 § 121.5.3)
Clinical Epidemiology and Bio-Statistics

An introductory course on the methods of measuring the distribution and determinants of disease frequency in Man. Measures of Population health and health services utilization will be covered. Variability and the need of statistics will be stressed. (6 credits)

BIO-PHYSICAL EDUCATION 640Z
(Also given as Androgogy 420 § 121.4.3 & Nursing 320 § 121.5.3)
Dynamics of Interviewing & Counselling

Prerequisite: Health Education 421 or equivalent. A laboratory course in which the student examines the dynamics of interviewing, models of human effectiveness, and theories of counselling, as well as the principles of the helping relationship. Counselling techniques in staff relations and supervision will also be explored. The course demands a high level of observation, participation and involvement from each student. (6 credits)

BIO-PHYSICAL EDUCATION 642Z
(Also given as Community Services 408 § 121.5.3)
Group Structure and the Role of the Community Worker.

The course is developed to assist volunteers, interested citizens, social workers, recreation directors and individuals with no formal health training, working as part of a multidisciplinary team, to identify their roles in order to play a more effective part as a community worker. Assignments will be directed toward practical applications of field work to problem solving in a field of their choice, i.e., post-retirement, rehabilitation of drug addicts and alcoholics, single parents, etc. (6 credits)

BIO-PHYSICAL EDUCATION 670Z
Outdoor Education in the Secondary School Curriculum.

The course provides an overview of outdoor education programs at the secondary school level. Existing outdoor education courses in camps, high schools and recreation departments are critically reviewed. New concepts, planning and development of units of instruction, problem areas and other facets of outdoor education for secondary school age students are examined. Lectures, Seminars, Field Study & Labs. 5 hours per week. (6 credits)

51.5 Department of Chemistry

Associate Professor and Chairman
M. DOUGHTY,

Professors
A. GRAHAM, S.J.
T. NOGRADY

Associate Professors
K. EKLER
D. McELCHERAN
R. H. PALLEN
G. J. TRUDEL
R. H. ZIENIUS

Assistant Professor
M. G. HOGBEN

Lecturers
M. BALDWIN
D. HUI

51.5.1 PROGRAMMES

108 BSc Honours in Chemistry

	Year I
24	Chem 312A^3, 314B^3, 336Z^6, 322Z^6, 342A^3, 344B^3
6	Math 332Z^6
6	Elec
	Year II
24	Chem 422Z^6, 432Z^6, 433A^3, 435B^3, 442A^3, 44B^3
6	Sc Elec
6	Elec
	Year III
18	Chem 423B^3 or 534A^3, 552Z^6, 531B^3, 532Z^6
12	Chem Elec
6	Elec

93 BSc Specialization in Biochemistry & Medicinal Chemistry

	Year I
18	Chem 326A^3, 328B^3, 338Z^6, 342A^3, 344B^3
6	Bio 320Z^6
3	Math 301B^3
6	Elec
	Year II
15	Bio 440Z^6, 431A^3, 315A^3, 317B^3
6	Chem 490Z^6
3	Chem 442A^3
6	Elec
	Year III
6	Chem 590Z^6
6	Pharmacology
6	Chem 592Z^6
6	Sc Elec
6	Elec

96 BSc Specialization in Chemistry

	Year I
24	Chem 312A^3, 314B^3, 322Z^6, 336Z^6, 342A^3, 344B^3
6	Math 332Z^6
6	Elec
	Year II
21	Chem 422Z^6, 442A^3, 444B^3, 433A^3, 452Z^6
3	Sc Elec
6	Elec
	Year III
15	Chem 412Z^6, 432Z^6, 435B^3
6	Chem Elec
3	Sc Elec
6	Elec

NOTE: Elective means a full elective outside the Faculty of Science. Science Electives means a full elective inside the Faculty of Science but outside the Department of Chemistry. Chemistry Elective means a full elective inside the Chemistry Department.

Joint majors with other disciplines within the Faculty of Science may be arranged in particular cases by consultation with the Departmental Chairmen.

51.5.2 COURSE DESCRIPTIONS

CHEMISTRY 112Z
General Chemistry

Pre-University course. Principles of chemistry, molecular and atomic theories, balancing equations, valence, oxidation-reduction, nature and concentrations of solutions, chemical equilibrium, ionization constants, solubility products, common ion effect, pH, formation and dissolution of precipitates, complex ions, theory of acids and bases, periodic table. Lectures: 3 hrs. per week both terms, Labs: 3 hrs. per week both terms. (6 credits)

CHEMISTRY 300Z
Concepts in Science

Prerequisites: None. An elective course for students outside the science discipline who perceive that a lack of science background may alienate them from much of the world's activities and writing. The aim of the course is to learn the fundamental principles and concepts within the physical sciences: heat, light, atomic structure,

chemical principles, Newtonian versus quantum mechanics, relativity, life, the universe and its structure. Emphasis will be placed upon understanding the nature of science, applying the principles to the practical disciplines of astronomy and photography. Mathematization will be kept to a minimum. Lectures: 3 hrs. per week, two terms plus occasional labs. (6 credits)

CHEMISTRY 312A, 314B
Introductory Inorganic Chemistry

Prerequisite: Chemistry 112Z. Two (3 credits) courses to be taken successively. The two courses cover the following topics, development of atomic structure, wave mechanical orbitals, periodicity of properties. Properties of ionic compounds, covalent compounds — molecular orbital treatment. Spectroscopy. Chemistry of the non-transitional elements and relation to atomic structure. Lectures: 3 hrs. per week for first and second term. Lab: 3 hrs. per week for first and second term Text: Day & Delbin, (Van Nostrand), Theoretical Inorganic Chemistry. (2 x 3 credits)

CHEMISTRY 315A
Photographic Chemistry

Prerequisite: Non-Science students. This is a combined laboratory and lecture course complementary to Communication Arts 305A/B (Dynamics of Visual Representation) and Physics 315A and 317B. In this course the basic fundamental principles of chemistry involved and applied to photographic process are discussed and demonstrated. Lab: 3 hrs. per week, first term. (3 credits)

CHEMISTRY 317B
Photographic Chemistry

Prerequisite: Non-Science students. This is a continuation of Chemistry 315A in which the photographic theory is treated more deeply in the chemical aspects. It estabtishes a firm and thorough knowledge of chemistry as applied to photographic process. Lab: 3 hrs. per week, second term. (3 credits)

CHEMISTRY 322Z
Organic Chemistry Theory

Prerequisite: Chemistry 112Z. A basic course in organic chemistry, it establishes a firm and thorough basis of bonding theory, stereochemistry and the correlations of molecular structure with reactivity before discussing organic reactions from a mechanistic point of view. The course is the first half of a four-term programme in organic chemistry. Lectures: 3 hrs. per week for two terms. Lab: 3 hrs. per week, both terms. Text: 3rd Ed., Hendrickson, Cram & Hammond, *Organic Chemistry* 2nd Ed., Helmkamp & Johnson (Freeman & Company), *Selected Experiments in Organic Chemistry*. (6 credits)

CHEMISTRY 326A, 328B
Organic Chemistry

Prerequisite: Chemistry 112Z. Two (3 credits) courses, to be taken successively. An introduction to organic chemistry with biological emphasis, covering concepts of molecular structure, stereochemistry, basic reaction mechanisms, reactions of the common functional groups, and practical applications to such groups, as detergents, foods, drugs and compounds of biological interest. Lectures: 3 hrs. per week, first and second term. Lab: 3 hrs. per week, first and second term. (2 x 3 credits)

CHEMISTRY 327A/329B
Introductory Organic Chemistry

Prerequisite: Chemistry 112Z, Bio-Physical Education students only. Two half courses to be taken successively. An introductory organic chemistry course which is compulsory for Bio-Physical Education students. Study of molecular structure, description of classes of organic compounds, basic concepts of reaction mechanism, bonding, structural isomerism, stereoisomerism, reaction mechanisms such as electrophilic and nucleophilic substitution and elimination reactions. Lectures: 2 hrs. per week (intormal lectures as far as possible) both terms. Learning Centre: one hour per week (structure and nomenclature). Lab: 3 hrs. per week for 1 term. Test: Benjamin F. Plummer (Van Nostrand, 1972) *Selected Principles of Organic Chemistry or Biochemistry*. (2 x 3 credits)

CHEMISTRY 336Z
Physical Chemistry

Prerequisite: Chemistry 112Z. Treatment of properties of gases. Kinetic molecular theory of gases. First law of thermodynamics, thermochemistry, entropy and the second and third laws of thermodynamics. Free energy and chemical equilibria. Properties of liquids, crystals, phase equilibria, the colligative properties, the rates and mechanisms of chemical reactions, the nature of electrolytes in solution. The thermodynamics of solutions of electrolytes. Lectures: 3 hrs. per week, for two terms. Text: 2nd Ed. Barrow (McGraw-Hill) Physical Chemistry (6 credits)

CHEMISTRY 338Z
Physical Chemistry for Biochemistry Degree Students

Prerequisite: Chemistry 112Z. Thermodynamics: heat, work, energy, free energy and chemical equilibria. Properties of liquids. Transport processes: iffusion, sedimentation, viscous flow. Properties of electrolyte and non-electrolyte solutions. Chemical kinetics. Lectures: 3 hrs. per week for two terms. (6 credits)

CHEMISTRY 342A
Analytical Chemistry

Prerequisites: Chemistry 112Z and Chemistry 322 or 326/328 and 336 unless taken concurrently. Treatment of analytical data. Gravimetric and volumetric Analysis. Acid-base and oxidation-reduction titrations. Theory of precipitation and complex formation analysis. The lab provides experience in use of volumetric, gravimetric and simple instrumental methods of analysis. Lectures: 3 hrs. per week, first term. Lab: 3 hrs. per week, first term. Text: Fischer & Peters (Saunders), Quantitative Analysis. (3 credits)

CHEMISTRY 344B
Analytical Chemistry

Prerequisites: Chemistry 112Z & 342Z (Also Chem. 322 or 326/328 and 336 unless taken concurrently). Introduction to instrumental methods of analysis including spectroscopy, atomic and molecular spectrophotometry, infra-red and nuclear magnetic resonance methods, chromatography, and electrochemical methods. Problems and interpretation of simple IR and NMR spectra form a part of this course. The laboratory is a continuation of that given in Chemistry 342A with the addition of several basic instrumental experiments. Lectures: 3 hrs. per week, second term. Lab: 3 hrs. per week, second term. Text: Willard, Merritt and Dean, (Van Nostrand) Instrumental Methods of Analysis. (3 credits)

CHEMISTRY 411B
Environmental Chemistry

Prerequisite: Chemistry 112Z or equivalent General aspects of environmental and ecology; cycles in nature. The chemistry of pollution, air-pollution, water pollution, water treatment. Compounds treated: oxides of carbon, nitrogen and sulfur, hydrocarbons and types of particles. Photochemical and chain reactions. Mercury, lead, oil detergents, insecticides will be examined from both their general chemistry and their contribution to pollution. Lectures: 3 hrs. per week, second term. (3 credits)

CHEMISTRY 412A, 414B
Intermediate Inorganic Chemistry

Prerequisites: Chemistry 312A, 314B. Two (3 credits) courses to be taken successively. *1.* A systematic survey of the properties, reactions and structure of the non-transition elements. *2.* The transition elements: Ligand field theories, spectra and magnetism, sigma and pi-bonded complexes,

inner transition elements, introduction to organometallic compounds. Lectures: 3 hrs. per week, both term. Lab: 3 hrs. per week both terms. (2 x 3 credits)

CHEMISTRY 413A
Advanced Inorganic Chemistry

Prerequisites: Chemistry 412A and 414B. Physical inorganic Chemistry: IR, NMR, X-Ray, Mossbauer and mass spectral studies of inorganic and organometallic compounds. Group theory and its applications. Lectures: 3 hrs. a week, first term (3 credits)

CHEMISTRY 415B
Organometallic Chemistry

Prerequisites: Chemistry 322Z and 412A (can be taken concurrently). Survey of transition and non-transition organometallic compounds including their roles in industrial catalysis and biological systems. Lectures: 3 hrs. per week for second term. (3 credits)

CHEMISTRY 422Z
Organic Chemistry

Prerequisite: Chemistry 322Z. A confirmation of Chemistry 322Z, discussing organic reaction mechanisms and synthetic methods at an advanced level. Lectures: 3 hrs. per week for two terms. Lab: 3 hrs. per week, first term. Text: 3rd Ed., Hendrickson, Cram & Hammond (McGraw-Hill), *Organic Chemistry;* Helmkamp & Johnson (Freeman), *Organic Chemistry*. (6 credits)

CHEMISTRY 423B
Advanced Organic Laboratory

Prerequisites: Chemistry 322Z & 422Z. Laboratory Individualized problems, syntheses or structure determinations based on the study of research literature, advanced techniques, (e.g. Catalytic and high-pressure reactions, vacuum techniques) are stressed, and well as the extensive use of spectroscopic methods. Lab: 4 hrs. per week, second term (3 credits)

CHEMISTRY 427B
Bio-Organic Chemistry

Prerequisite: Chemistry 326A/328B. Chemistry and biological implications of a variety of natural products like lipids, terpenes, carotenoids. Heterocyclic compounds and alkaloids are discussed in detail. Lectures: 3 hrs. per week, second term. (3 credits)

CHEMISTRY 432Z
Physical Chemistry Laboratory

Prerequisite: Chemistry 336A. Some knowledge of Fortran is desirable. The first term: Treatment of Experimental Data. Experimental Error, Graphical and Numerical Methods, Problems using literature date. Spectra analysis. Use of the computer is encouraged. Second Term: Laboratory experiments in Physical Chemistry. Lectures: 3 hrs. per week, first term. Lab: 4 hrs. per week, second term. (6 credits)

CHEMISTRY 433A
Physical Chemistry-Chemical Thermodynamics

Prerequisite: Chemistry 336A. A second course in thermodynamics. First, Second and Third Laws. Activities. Electrolyte and non-electrolyte solutions. Lectures: 3 hrs. per week first term Text: Lewis & Randall (McGraw-Hill), Thermodynamics. (3 credits)

CHEMISTRY 435B
Statistical Mechanics

Prerequisite: Chemistry 433A Kinetic theory of gases, Maxwell-Boltzmann Distribution, Transport properties. Theory of Reaction rates, Coloidal State and Surface phenomena. Lectures: 3 hrs. per week, second term. (3 credits)

CHEMISTRY 437A
Atomic and Molecular Spectra

Prerequisite: Chemistry 336Z. A descriptive course of atomic and molecular spectra and structure. Lectures: 3 hours per week, first term. (3 credits)

CHEMISTRY 439A
Introductory Physical Chemistry

Prerequisite: Biology students only. Lectures: 3 hrs. per week, first term. Text: Van Holde, Physical Biochemistry. (3 credits)

CHEMISTRY 442A
Advanced Analytical Chemistry.

Prerequisite: Chemistry 342A, 344B. A continuation of the study of modern instrumental methods of analysis following that in Chemistry 342B, including electro-chemical methods, separation techniques, mass spectrometry, Raman spectroscopy, fluorescence spectrometry, turbidimetry, Nephelometry and Electron Spin Resonance. Problems and interpretation of IR, NMR and MS spectral data form an integral part of this course. The laboratory provides practice in the use of modern analytical instruments related to the techniques discussed in Chemistry 342A as well as this course. Lectures: 3 hrs. per week, first term. Lab: 3 hrs. per week, first term. Text: Willard, Merritt and Dean, Instrumental Methods of Analysis. (3 credits)

CHEMISTRY 444B
Advanced Analytical Chemistry.

Prerequisite: Chemistry 442A. A further study of modern instrumental methods of analysis including X-Ray Spectroscopy, Radiochemical methods, Refractometry, Polarimetry, Thermal Analysis, miscellaneous topics. The laboratory is devoted to the identification of organic compounds using classical methods of analysis as well as spectral and chromatographic data. Lectures: 3 hrs. per week, second term. Lab: 3 hrs. per week, second term. (3 credits)

CHEMISTRY 452Z
Industrial Chemistry

Prerequisite: Chemistry 322Z or 326A. Brief outline of the chemical industry. Development of industrial processes. Unit operations and equipment. Calculations of material and energy balances in a plant. Petroleum, petro-chemicals, plastics, fibres, fertilizers, rubbers, pharmaceuticals, pulp and paper, wood chemicals and pollution are some of the specific topics discussed. Lectures: 3 hrs. per week for two terms. Lab: no formal labs. However, seven one-half day plant tours are an integral part of this course. (6 credits)

CHEMISTRY 490Z
Biochemistry.

Prerequisites: Chemistry 336Z or 338Z or equivalent. The molecular components of cells: carbohydrates; aminoacids and proteins; lipids, lipoproteins and membranes, carotenoids, steroids. Nucleotides and nucleic acids. Catabolism: glycolysis, Krebs cycle, electron transport. Photosynthesis. Lectures: 3 hrs. per week for two terms. Lab: 3 hrs. per week for two terms. (6 credits)

CHEMISTRY 523A
Chemistry of High Polymers.

Prerequisite: Chemistry 322Z. A detailed study of the mechanisms involved leading to the formation of polymeric species includes condensation, free radical, cationic anionic and co-ordination mechanisms. Some physical systems and examples of polymers will be discussed and examined. Some general considerations concerning reactivity and reactions of macromolecules. Lectures: 3 hrs. per week, first term. (3 credits)

CHEMISTRY 525B
Chemistry of High Polymers

Definition and description of different polymer molecules, monomer-polymer differences; polymerization mechanisms and kinetics — (M.W. Dist.); conformation and dimensions of random polymer chains; thermodynamics of polymer solutions; analytical methods of polymer science; thermodynamics of rubber elastic; the crystalline state; mechanical properties of high polymers; structure and function of biopolymers.

Lectures: 3 hrs. per week second term. Text: F. Billmeyer, Jr., Textbook of Polymer Science, 2nd Ed. (3 credits)

CHEMISTRY 531B
Electrochemistry.

Prerequisites: Chemistry 336Z and 433A. Debye-Huckel Theory, electrolytic conduction. transport properties in electrolytes, electrochemical cells. Thermodynamics and kinetics of electrochemical system. Overvoltage. Lectures: 3 hrs. per week, second term. (3 credits)

CHEMISTRY 532Z
Theoretical Chemistry.

Introductory matrix algebra and group theory. Quantum mechanics and the special functions. Perturbation methods, atomic structure and spectra. Theories of molecular bonding, molecular structure and spectra. Inter-molecular forces and elements of liquid state and solid state theory. Rate processes, photochemistry and chain reactions. Lectures: 3 hrs. per week, both terms plus monthly individual tutorial. Text: Levin, Quantum Chemistry. (6 credits)

CHEMISTRY 534A
Advanced Physical Chemistry Laboratory.

Lab: 4 hrs. per week, first term. (3 credits)

CHEMISTRY 535A
Radiation Chemistry.

Prerequisite: Chemistry 112Z. A study of the chemical effects caused by ionizing and other nuclear radiations in their passage through matter. A description will be given of the quantitative measure of radiation, energy absorbed, the energy absorption mechanism, the reaction paths of the unstable intermediates (excited molecules, radicals and ions). A discussion of the mechanisms reduced for the radiation-induced dissociation of H_2O, organic compounds in the gaseous and liquid state and radiation effects in specific solids. Lectures: 3 hrs. per week for one term. (3 credits)

CHEMISTRY 541A
Nature and Analysis of Pollutants.

Prerequisites: An introductory analytical and an introductory organic chemistry course. A survey of major industrial and municipal pollutants of concern to modern man — their effect and analysis. The course includes a description of measuring systems, sampling procedures, concentration and separation techniques, and of methods commonly used to analyze pollutants. Topics such as continuous monitoring systems, automated analyses, date analysis and pollution control techniques are also discussed. Lectures: 3 hrs. per week first term. (3 credits)

CHEMISTRY 552A
Senior Thesis.

Students in Honours and Specialized programmes, with permission of the department, undertake a research project in any branch of chemistry, directed individually by a faculty member, and submit a written detailed report. (6 credits)

CHEMISTRY 590
Advanced Biochemistry

Prerequisites: Chemistry 490Z. Biosynthesis of carbohydrates, lipids and amino acids. DNA, RNA, protein biosynthesis and its regulation. Contractile systems. Active transport and bioelectric potentials. Enzymes: kinetics, mechanism, structure and regulation. Lectures: 3 hrs. per week for two terms. Lab: 3 hrs. per week for two terms. (6 credits)

CHEMISTRY 592Z
Medicinal Chemistry

Types of drug action. Influence of physicochemical properties. Pharmacological effect of specific structural moieties and stero-chemical aspects. Drug-receptor interactions, topography of receptors. Theories and molecular mechanisms of drug action. Lectures: 3 hrs. per week for two terms. (6 credits)

51.6 Department of Classics

Associate Professor and Chairman
D. BROWN

Assistant Professors
S. CASEY
E. PRESTON
L. SANDERS
B. WARDY

51.6.1 DEPARTMENT OF CLASSICS

The Department of Classics at Loyola includes not only philological courses (Latin, Greek, and Hebrew and the masterpieces of these literatures read also in translations) but offers courses in Ancient History, Prehistory, Archaeology, and Anthropology. Courses leading to the Bachelor of Arts and to the Honours Bachelor of Arts degrees are ordinarily regarded as belonging to one of two different programmes. The programme in *Classical Philology*, requiring linguistic competence in Latin, Greek, or Hebrew, emphasizes aesthetic appreciation of the ancient literatures. The programme in *Classical Studies*, which does not require a knowledge of the languages, is directed toward broader considerations of societal problems arising from the ''living past''. Many courses are cross-listed by other departments, especially *History*. It is understood that when a *Classics* course is taken under some other department, the requirements and regulations of that department are then applicable.

Any course offered by the Classics Department may be taken by any qualified student as an *Elective*.

Provided all the general requirements for graduation are fulfilled, students registered in the Department of Classics, in either of its two programmes, can qualify for the BA degree after successfully completing 42 credits. The Honours Degree is awarded to those students who have completed, with an overall average of at least 65%, 54 credits in either programme plus an additional 6 credits from the offerings of the *Interdisciplinary Studies Centre*, but only such courses as are directly coherent with the student's programme and approved by the Department of Classics.

All courses may be taken as Honours courses. Whenever a course is open to all students, students in an Honours Programme will meet with the professor for tutorial sessions in addition to the regularly scheduled classes. Some courses will be open only to students in an Honours programme. All students registered for a programme in Classics must consult with the department chairman before registering for any course given in the department.

51.6.2 COURSES IN CLASSICAL STUDIES

CLASSICS 311A
The Beginnings of European Literature (Greek Literature)

The Greek background of European literature: the *Iliad* of Homer, selections from the Greek dramatists (the *Oresteia* of Aeschylus, the *Oedipus Rex* and the *Antigone* of Sophocles, the *Bacchae* of Euripides, and at least one comedy of Aristophanes), the Pastoral Poets, Plato's *Symposium*, and Aristotle's *Poetics*. (3 credits)

CLASSICS 313B
The Beginnings of European Literature (Latin Literature)

The Roman background of European literature: the *Aeneid* and *Eclogues* of Vergil, Ovid's *Metamorphoses*, poems of Catullus, Horace and Juvenal, the *De Rerum Natura* of Lucretius, plays and dialogues of Seneca. (3 credits)

CLASSICS 321B
The Comic Art

An investigation into the evolution of comedy from our earliest literary sources to the present. The classical influence in later comic literature. Theories of comedy, ancient and modern. Reading material will be drawn mainly from Greek and Roman dramatic literature. (3 credits)

CLASSICS 324Z
The Greeks and the Afterlife

A study of magical ritual, mystic cults, myths, philosophies and literary conventions connected with the idea of immortality in the ancient world. Concepts of the Underworld with particular emphasis upon the Greeks, the background to these concepts in Egyptian belief, and their influence and development in later Roman thought and practice. The theme of the course is the complementary role of the rational and irrational elements in the individual and society, and the pattern of action and reaction in the history of ideas created by the tension between these two elements. Readings translated from ancient texts will be used to illustrate the various stages in the growth and development of ideas on immortality. These literary sources will include the Egyptian Book of the

Dead, Homer, Hesiod, Sophocles, Euripides, Plato, Lucretius, and Vergil. (6 credits)

CLASSICS 330Z
(Also given as History 320Z § 51.14.2)
Greek and Roman History

A survey of Greek and Roman history from the earliest times to the fall of the Roman Empire in the West, viewed primarily through the eyes of contemporaries, emphasizing those issues that have excited and continue to arouse interest and controversy among historians. Though Athens for its unique cultural and political achievement and Rome for its administrative genius and imperial successes inevitably occupy the central interest, these cities will be examined from the viewpoint of their critics as well as admirers. The credibility of the ancient evidence will be carefully assessed. Due attention will be directed towards social and economic as well as purely political factors. The course will be designed to demonstrate the extent to which the lower classes — peasants, soldiers, sailors, craftsmen, and traders — contributed as much to the classical achievement as kings, emperors, and aristocrats. (6 credits)

CLASSICS 331A
Civilization, Barbarism, and Savagery

The purpose of this course will be to formulate and develop, if possible, useful definitions of civilization, barbarism, and savagery, with a view toward answering the question as to whether or not man has ''progressed''. Students will be expected to research and then orally to report upon as wide a variety of human cultures as will be possible and practicable, from the most ''primitive'' to the most ''advanced''.

The meanings and uses of cannibalism, human sacrifice, torture, and self-mutilation. Hunting, fishing and food gathering societies (Old Stone Age) contrasted with early food producing ones (New Stone Age). The first cities (Bronze Age); their mores and ethics. The great ''advances'': fire, language, religion, animal domestication, pottery, metallurgy, writing. (3 credits)

CLASSICS 340Z
(Also given as History 322Z § 51.14.2)
The Ancient World

After a preliminary survey of Pre-History, a thorough study of the first civilizations: Mesopotamia (Sumer, Akkad, Babylon, Assyria), Egypt, Phoenicia, Ugarit, Canaan, Minoan Crete, India and China in their early Bronze Ages. Ancient sources, wherever possible, will be used. (6 credits)

CLASSICS 372Z
Homer and the Epic Hero

This course will deal with the principal Greek and Roman Epics, read in English translation. Emphasis will be on Homer's *Iliad* and *Odyssey*, each thoroughly analysed in lectures and in classroom discussion. The form, content and meaning of each work as an orally transmitted epic. But of the hero in a warrior society: his duties, privileges, responsibilities and moral values. Comparison with the heroes of Roman society as presented by Vergil *(Aeneid)* and Lucan *(The Civil War)*, as well as with those of the modern world. (6 credits)

CLASSICS 373A
Chinese Myths

Their sources, development, and analysis. The folktales and myths will be used as a means of understanding the ideas and sentiments of the ancient Chinese. Those myths were selected which are most representative of Chinese mythology, still live in the minds of the people, and are referred to most frequently in their literature. (3 credits)

NOTE: This course may be taken by students engaged in the Third World Studies Programme.

CLASSICS 374 A,B,Z
Love, Hate, and Friendship in the Classical World

The growth and failure of human relationships were of intimate concern to every man and woman in the ancient world, as they are today. This course will investigate in the literature of classical times the evolving shape of human encounter in terms of three basic emotions: love, hate, and friendship.

A. In the first semester the theme ''love'' will be examined as expressed in the *Odyssey* of Homer and mainly in the love poetry of Greece and Rome.

B. In the second semester, the theme ''hate and revenge'' will be seen in its most tragic expression — the plays of the Greek dramatists. The third theme, ''friendship'', will be examined in its elemental form in the *Iliad* of Homer, and then in its urbane expression in the works of Plato and Cicero. (either 3 or 6 credits)

CLASSICS 376Z
Myth and Mythmaking

An examination of the universal features of myth. Recurrent patterns of myth in primitive cultures (Asio-Indian, American-Indian, Insular Pacific, Celtic, etc.). Near Eastern Mythologies (Mesopotamia, Ugarit). Mythological remains in the Old Testament and post-biblical Jewish literature. Major classical myths, the origin of the gods, the feats of heroes, and the adventures of mortals in Homer, Hesiod, the Greek Tragedians, the Platonic Dialogues, Ovid, and the Bible. (6 credits)

CLASSICS 382Z
A Comparative Study of Judaic and Greek Traditions

The course deals with the problems involved in the encounter of the Judaic and Greek traditions and is designed also for students of Philosophy, Theology, and History.

The end of the first diaspora. Different currents (exclusiveness versus rapprochment) under Persian rule. Alexander legends. Maccabaean Hellenism. Anti-semitism in Alexandria. The mutual influence between Judaism and Hellenism as manifest in philosophical and religious writings, in symbols and customs. Their importance for the development of Western culture. The destruction of political Judaic independence and gradual intellectualization of Jewish life. The development of the synagogue and the Tanaitic Academies. (6 credits)

CLASSICS 384Z
Greek Drama: Theatre and Democracy in Fifth Century Athens

Essentially a study of the literary and artistic merits of the tragedies of Aeschylus, Sophocles, and Euripides, and the comedies of Aristophanes. The ritual origins of drama, mythical sources, and the growth of the dramatic form. Greek theatre as an expression of the democratic movement and of the intellectual revolution in fifth century Athens. (6 credits)

CLASSICS 386Z
Women in Classical Antiquity

An examination of the social status and political influence of woman in ancient Greece and Rome. Particular emphasis will be placed upon the apparent contradiction between the seemingly inferior position occupied by women in fifth century Athens and the general enlightenment that characterized the epoch. Within this context the influence of war upon the struggle for feminine emancipation, as seen through the eyes of tragedians, comic writers, philosophers, and historians, will be considered. Roman women will be viewed with particular reference to the question: to what extent the essentially hostile scandalmongering of the sources is reflective of veracity of fact of an essentially non-liberal environment. (6 credits)

CLASSICS 430Z
Propaganda and Political Deception in Greek and Roman History

An examination of the relationship between polit-

ical ideas and practice with particular emphasis upon the slogans and false ideologies invented to justify war, peace, and the implementation of political and constitutional programmes by both radical and reactionary elements. Though inevitably the chief sources discussed will be literary, due attention will also be directed towards the value of numismatic, epigraphic, and artistic material as a means of winning over the mind of man. (6 credits)

CLASSICS 432Z
(Also given as History 522Z § 51.14.2)
Honours History Seminar
Human Beginnings: The Stone Ages

The origin of man and man's place in evolution and in nature. Man the toolmaker: australopithecines, Homo habilis, Homo erectus, Peking man, Java man, Solo man, and others. The fossil evidence and taxonomic problems. Man the hunter: meat-eating, intelligence, and sexual differentiations. Territoriality and aggression: The struggle for existence and the survival of the fittest: Darwinism, Marxism, and sociology.

Palaeolithic cultures: Abbevillean, Acheulean, Clactonian, and Mousterian. Neanderthal and Cro-Magnon mixtures? Man the artist. From Perigordian to Magdalenian. Epipalaeolithic and Mesolithic societies. The Neolithic revolution. Stone Age cultures of today. Importance and relevance of prehistory. Homo ludens. (6 credits)

CLASSICS 434Z
(Also given as History 324Z § 51.14.2)
An Introduction to Archaeology

Archaeology as a science; its purpose, methods, and techniques. The relationship of Archaeology to Pre-History, Ancient History, Fine Arts, and Anthropology. Though the course will deal principally with Classical Archaeology and Greek and Roman Art, the Archaeology of Africa, the Orient and the Americas will also be considered. (6 credits)

CLASSICS 435Z
Maya, Aztec, and Inca:
The Pre-Columbian Civilizations

An anthropological, archaeological, and historical investigation and evaluation of pre-Columbian new world civilizations. When and from where came the first Americans? Languages and races throughout the Americas. Epicanthic fold and Mongolian spot. Nahuatl, Nahua, and Quiché. The question of later trans-Pacific and trans-Atlantic contacts before the Conquista. The Olmec "mother" culture. Current archaeological excavations.

Human sacrifice and "autosacrificio" viewed as religious phenomena and cultural determinants. Xipe, Tlaloc, Quetzalcoatl, and the ball "game". Astrology, astronomy, numbers, and writing. Teotihuacan and the pyramids. Warriors and gardeners: Maya, Toltec, and Aztec. Merchants and spies. Forerunners of the Inca. The Inca Empire. The Conquista, European, Far Eastern, Near Eastern, African, and American civilizations compared, contrasted, and if possible, evaluated. (6 credits)

CLASSICS 436Z
Continuity and Change: An Intellectual History of the Late Roman Empire

A study of the main intellectual and social forces in the late Roman Empire that contributed most significantly to the formation of European culture. Among those topics treated will be: Neo-Platonism, Gnosticism, the Greek and Roman system of education, government and private welfare policies, mystery religions, late Judaism, early Christianity, the religious policy of pagan and Christian Emperors, contemporary art and architecture. (6 credits)

51.6.3 COURSES IN HEBREW

CLASSICS 360Z
Elementary Hebrew

An introductory course in reading, writing, and grammar for students with little or no knowledge of Hebrew. This course is designed not only for those interested in conversational Hebrew, but also for students in the department of Theology, who will be assisted in acquiring first a reading command of the language. (6 credits)

CLASSICS 460Z
Intermediate Hebrew

Practice in grammar and conversation. Readings from modern Hebrew authors. (6 credits)

CLASSICS 462Z
An Introduction to Biblical Hebrew

Prerequisite: Classics 360Z. A study of classical Hebrew grammar. Accurate reading of selected prose passages of the Hebrew Bible. (Poetic selections may also be studied if the students so desire). (6 credits)

CLASSICS 560Z
Introduction to Modern Hebrew Literature

The selections will consist of essays, stories, short novels, and poetry. In addition, composition practice to develop an understanding of grammar and style. (6 credits)

51.6.4 COURSES IN CLASSICAL PHILOLOGY

CLASSICS 390Z
Elementary Latin

A course for those with little or no experience with Latin. Major emphasis will be placed on assisting the student in acquiring a reading command of the language. Open to all students but especially those interested in classical languages, history, philosophy, and theology. (6 credits)

CLASSICS 490Z
Latin Literature

Prerequisite: Classics 390Z or equivalent. Cicero's *Pro Archia*, selections from Catullus and the *Odes* of Horace. (6 credits)

CLASSICS 492Z
Late Latin

A study of selected texts from the works of patristic and medieval writers. This course is directed especially to students of history, philosophy, and theology with at least a knowledge of elementary Latin. (6 credits).

CLASSICS 590Z
Latin Literature (Advanced)

Prerequisite: Classics 490Z. Cicero's *Pro Lege Manilia* and the second, fourth, and sixth books of the *Aeneid*. (6 credits)

CLASSICS 350Z
Elementary Greek

A course for those with no previous knowledge of Greek. Major emphasis will be placed on assisting the student in acquiring a reading command of the language. This course is designed not only for those interested in classical literature but also for students in the departments of Philosophy and Theology. (6 credits)

CLASSICS 450Z
Intermediate Greek

Prerequisite: Classics 350Z or equivalent. Further work toward the acquisition of a reading command of the language. Plato's *Apology* and *Crito*. (6 credits)

CLASSICS 550Z
Greek Literature

Prerequisite: Classics 450Z. Demosthenes' *Philippics* and Euripides' *Alcestis*. (6 credits)

CLASSICS 552A
Plato: *The Republic*

Prerequisite: Classics 450Z. (6 credits)

CLASSICS 554Z
Herodotus and the Lyric Poets

Prerequisite: Classics 450Z. (6 credits)

CLASSICS 556Z
Homer

Prerequisite: Classics 450Z. Extensive readings from the two epics in Greek; both works in their entirety in English. (6 credits)

CLASSICS 558Z
Greek Tragedy
Prerequisite: Classics 450Z. Aeschylus' *Agamemnon*, Sophocles' *Oedipus Rex*, Euripides' *Hippolytus*. (6 credits)

CLASSICS 592Z
Lucretius
Prerequisite: Classics 490Z. A study of the philosophy and poetry of the *De rerum natura* of Lucretius. Readings in the original and in translation. (6 credits)

CLASSICS 594Z
Livy and Tacitus
Prerequisite: Classics 490Z. Extensive readings from Livy, Books 21-30, and the *Annales* of Tacitus, with particular attention to the Latinity peculiar to each historian. (6 credits)

CLASSICS 596Z
Roman Comedy
Prerequisite: Classics 490Z. (6 credits)

CLASSICS 598Z
Roman Satire
Prerequisite: Classics 490Z. (6 credits)

CLASSICS 612Z
Cicero
Prerequisite: Classics 490Z. Careful examination of selections from the oratorical and philosophical works. (6 credits)

51.7 Department of Communication Arts

Professor and Chairman
J. E. O'BRIEN, S.J.

Administrative Assistant
D. TADDEO, JR.

Professor
J. BUELL

Associate Professors
C. FISCHER, S.J.
C. GAGNON
M. MALIK

Assistant Professors
M. GERVAIS, S.J.
WM. GILSDORF
J. TIERNEY
G. VALASKAKIS

Lecturers
D. DINIACOPOULOS
T. GECSEI
A. MIRABELLI
D. MURPHY

51.7.1 PROGRAMMES

60	**BA Specialization in Communication Arts**
	Year I
18	Comm Arts 301A/B[3], 303A/B[3], 305A/B[3], 307A/B[3], 308Z[6]
	Year II
6	Comm Arts Group "A"
6	Comm Arts Group "B"
6	Comm Arts Group "C"
	Year III
6	Comm Arts Group "A"
6	Comm Arts Group "B"
6	Comm Arts Group "C"
6	Comm Arts Group "A" or "B" or Approved cognate course outside Department

NOTE: Students take 30 credits a year

42	**BA Major in Communication Arts**
	Year I
18	Comm Arts 301 A/B[3], 303 A/B[3], 305 A/B[3], 307 A/B[3], 308Z[6]
	Year II/III
6	Comm Arts Group "A"
6	Comm Arts Group "B"
6	Comm Arts Group "C"
6	Comm Arts Group "A" or "B"

NOTE: Students take 30 credits a year

51.7.2 DEPARTMENT OF COMMUNICATION ARTS

The Department offers two programmes of study:

a) *Bachelor of Arts, Specialization in Communication Arts*
consisting of a minimum of 60 credits in Communication Arts and 30 credits from electives outside the Department.

b) *Bachelor of Arts, Major in Communication Arts*
consisting of a minimum of 42 credits in Communication Arts and 48 credits from electives outside the Department.

Students who have been accepted into the Department take the following 18 credits in Univ. I: Comm Arts 301 A/B[3], 303 A/B[3], 305 A/B[3], 307 A/B[3], 308Z[6].

Students "specializing" in Communication Arts choose the remaining 42 credits as follows:

12 credits from courses in Group A
12 credits from courses in Group B
12 credits from courses in Group C
and the remaining 6 credits from courses in Group A or B, or with the approval of the Department in cognate courses outside the Department.

Students "majoring" in Communication Arts choose the remaining 24 credits as follows:

6 credits from courses in Group A
6 credits from courses in Group B
6 credits from courses in Group C
and the remaining 6 credits from courses in Group A or B

Department Objectives:

The purpose of the overall programme is to allow the student to develop his/her creative, critical, and intellectual potential in the context of our media-oriented society. Related studies in the humanities, sciences, and

social sciences are an integral part of the programme.

Intellectually and critically, both in seminar rooms and laboratories, the primary concern is to investigate "media man" and "media world", to understand more fully the role of media in society, to examine critically the goals of society as projected in media, and to assess realistically the responsibilities of media vis-a-vis that society. To this end, students are encouraged to develop a personal artistic and ethical statement on the quality of life and the goals of society.

Integrated with this, the student's creative work starts with acquiring skills in the basic technology of the media, and understanding these media as communicational modes. This is followed and enlarged by a concentration on the rhetorical and artistic dynamics of media (be it film, television, radio-sound, photo, etc.) and on the content of a work created in a particular medium.

The curriculum is designed:

1. for students who intend to continue graduate studies in communication;
2. for future writers, critics, communication arts consultants, directors, and performers;
3. for future teachers in the field of radio, television, film;
4. for students who plan a career in the areas of publicity, promotion, advertising and public relations.

Facilities:

The department has one professionally-equipped television-film studio, 3 Plumbicon cameras, telecine chain, 2" - 1" - ½" videotape recorders and editing facilities, portable TV cameras, several 16mm professional units, 16mm sync and editing units, and complete super 8mm sound/film units; a photographic laboratory and negative room, and optical laboratory, a holographic and laser laboratory, a sound laboratory, a research studio for the measurement of visual and audio information loads, an electronic and electromechanical programmer for multi-media use, and a learning centre with audio-video terminals.

Department Admission Requirements:

Bachelor of Arts degree: The normal requirement for students residing in Quebec is the completion of the CEGEP programme. (D.E.C.); for students residing outside Quebec, the equivalent is the completion of 13 years of schooling.

The maximum number of students the department can accept is determined by space and technical facilities, and usually applications tend to outnumber that maximum.

To allow us to make a fair and informed selection we ask the applicants to provide us with adequate information about themselves, their work, and their aims. For this purpose, applicants are requested to submit:

1) a comprehensive letter of intention stating why the applicant wishes to major in Communication Arts.
2) letters of recommendation, at least two of which should be from teachers who are acquainted with the applicant's talents and ability.
3) a complete record of all studies to the present time, including those courses in which the applicant is now enrolled.
4) an interview, which will include a discussion of one or two creative projects. These personal projects of the applicant should be submitted along with items 1, 2 and 3 early in the second semester, if possible.

Applications and all supporting documents should be sent to the Admissions Committee, Department of Communication Arts, Loyola Campus of Concordia University, 7141 Sherbrooke St., W. Montreal H4B 1R6, Quebec.

Deadline for Applications is April 15.

Diploma in Communication Arts:

The Department also offers a one-year diploma programme for students who have completed their undergraduate degree.

Detailed information on the programme is given in the University's Calendar of Graduate Studies.

51.7.3 COURSE DESCRIPTIONS

COMMUNICATION ARTS 301 A/B
History of Communication Media

Prerequisite: Comm. Arts Major or Spec. Selected segments from the history of film, radio, television, drama, journalism and design, related to the contemporary philosophy of communication arts. Explanation and demonstration of major styles, art work, authors. (3 credits)

COMMUNICATION ARTS 303 A/B
Communication Analysis

Prerequisite: Comm. Arts Major or Spec. General and detailed analysis of various information complexes, e.g., exhibitions, theatres, cinema performances, museums, galleries, countryside, city streets, highways, department stores, etc. — from the point of the information aids used to influence the perception of visitors-light, space, sound, pictures, words, and exhibits. (3 credits)

COMMUNICATION ARTS 305 A/B
Dynamics of Visual Representation

Prerequisite: Comm Arts Major or Spec. or approval of the professor. The objective of this laboratory course is to train students to perform basic experiments in vision and perception — to explore space, distances, planes, tones, light, etc. From the experiments, the students are led to discover fundamental laws which underlie visual representation. Photography (and its techniques) is the medium by which these experiments are recorded for observation and discussion. $50 charge for course materials. (3 credits)

COMMUNICATION ARTS 307 A/B
Introduction To Audio-Visual Media Technology

Prerequisite: Comm Arts Major or Spec. The *Sound Section* is designed to provide a fundamental working knowledge of audio systems and practices as applied to visual programmes. Topics to be treated: basic physics, electricity, acoustics, related equipment. The *Graphics Section* is designed to provide an understanding of colour, content and design theories, basic graphic techniques and a working knowledge of various projection and duplication systems (35mm, overhead, opaque, diazo, photocopy and graphic media integration). (3 credits)

COMMUNICATION ARTS 308Z
The Cinematic and the Electronic Image

Prerequisite: Comm Arts Major or Spec. A practical approach to an understanding of the common elements of film and video media, and of the specific differences inherent in their effective

use. Students develop treatments and scripts for course productions. (6 credits)

GROUP A

COMMUNICATION ARTS 420Z
Media and Media-Culture

Prerequisite: Comm Arts Univ. II and III students. This course is about media and their function, overt and covert; their effect on perception: as bases for thought, organization, technologies: as determinants of content: as accelerators of cultural changes; oral-aural, manuscript, print, electronic cultures, current cultural dynamics. The method is lecture-discussion and projects. Assignments are more or less monthly. (6 credits)

COMMUNICATION ARTS 421A
Mass Communication

Prerequisite: Open to all Univ. II and III students. The course will examine the nature and forms of Mass Communication, the social sources and uses of Mass Communication, its psychology, audiences and effects. The ethics of Mass Communication will also be discussed. Through guest lecturers from the various media and readings of contemporary analysis/critiques, issues such as media ownership and access, government and self-regulation, technological implications, media accountability, etc., will be raised. (3 credits)

COMMUNICATION ARTS 423B
Psychology of Communication

Prerequisite: Open to all Univ. II and III students. Building on a construct of a communication model, the course will examine the social-psychological factors of context and setting, the dimensions of the source-receiver, of the message, the channel, and the measurement of feedback and communication effects. Analysis and experience in developing communication strategies of attention, perception and acceptance will be included. (3 credits)

COMMUNICATION ARTS 424Z
Inter-Cultural Communication

Prerequisite: Open to all Univ. II and III students. Do the values of a person or a society influence the processes and products of communication? How do specific values affect interpersonal, intergroup and mediated communication? What problems arise in communicating both personally and with media, inter-culturally? The course will focus on these and other questions related to communication in an inter-cultural context. Specific problems in Canadian inter-cultural communication will be examined, including French-English communication and communication with ethnic minorities. (6 credits)

COMMUNICATION ARTS 524Z
Feature Television

Prerequisite: Comm. Arts Univ. III students with approval of instructor. An examination in depth of content, styles, and forms in the feature television programme, with emphasis on television opera, ballet, drama, musical, variety, quiz, and public affairs. Examples drawn from TV programmes in Canada, USA, Europe and Asia. (6 credits)

COMMUNICATION ARTS 525A
Documentary Film and Television Genres

Prerequisite: Comm. Arts 443A, 443B, or approval of instructor. Survey of genres in documentary film and television as: biographical, industrial travelogue, nature, scientific, training, educational, children's films and TV programmes. Examples from Canada, USA, Europe. (3 credits)

COMMUNICATION ARTS 527 A/B
Film Ideas

Prerequisite: Comm. Arts Univ. III students. A seminar in film criticism, the course focuses on the aesthetic cultural dimension, exploring the student's sensibility within the context of contemporary sensibility. Viewing, discussion, written critiques of present trend-setting film. (3 credits)

COMMUNICATION ARTS 528Z
Broadcasting Policy In Canada

Prerequisite: Open to all Univ. III students. A course designed to prepare students for the regulatory and legal constraints facing Canadian broadcasters, and to situate these restraints within their historical and political context. The course will cover the current Broadcasting Act, the CRTC, the CBC, private broadcasters, lobbies, the history of broadcasting in Canada, and future technical and political trends. The course will be given seminar-style and final marks will reflect the student's participation in the class discussions. (6 credits)

COMMUNICATION ARTS 530Z
Media and Community Development

Prerequisite: Open to all Univ. III students, with approval of instructor. Do the means of communication bias the development of a society? How do media influence the process of social and cultural change and economic development? Are specific media suited to specifically-defined development projects? The course will focus on these and other questions related to media's possible effect on and usefulness of community development. Resource material will include the NFB's Challenge for Change programme, Cable TV, current media projects, and UNESCO work. Student projects will include field work. (6 credits)

COMMUNICATION ARTS 532Z
Organizational and Political Communication

Prerequisite: Open to all Univ. III students. The course will define and initially relate organizational and political communication. Patterns of formal and informal communication within a society, the general components of communication networks, the nature of public opinion and receiver analysis, intra/extra organizational communication, are several of the areas which will be reviewed. (6 credits)

GROUP B

COMMUNICATION ARTS 438Z
Advanced Script-Writing For Film

Prerequisite: approval of instructor. A practical course in writing film-drama: story construction and plotting, scene-making, characterization and character development, dialogue, dramatic continuity, timing, pacing, rhythm, suspense, and creative criticality. Many of these fictional and dramatic techniques will as the occasion arises, be applied to non-fictional scripts as well. The method is lecture, discussion, demonstration, critique. Assignments are continual and on-going. (6 credits)

COMMUNICATION ARTS 440Z
Advanced Script-Writing For Television

Prerequisite: submission and acceptance of an original short story. The course provides fundamental knowledge of visual scripting, research and evaluation technique. Practical experience is given in writing, narration, dialogue, speech styles, characterization and plot development, scripting for drama, comedy, documentary, children's, variety, TV series, and women's shows. (6 credits)

COMMUNICATION ARTS 441A
Seminar in Propaganda

Prerequisite: open to all Univ. II and III students. The aim of the course is to recognize the orchestration of the elements of propaganda around us and to develop the means to deal with it. The method followed will be discussion and presentation of research findings by teams of 2-4 students. (3 credits)

COMMUNICATION ARTS 443A
Documentary Film

Prerequisite: Open to all Univ. II and III students. A survey of the documentary film field from 1895 until 1960, with an examination of major styles: Romantic, Realistic, Impressionistic, Expressionistic, Avant-Garde. The styles will be examined in the works of R. Flaherty, J. Grierson, F. Capra, B. Wright, J. Ivens, A. Cavalcanti, W. Ruttman. (3 credits)

COMMUNICATION ARTS 443B
Documentary Television

Prerequisite: Open to all Univ. II and III students. Survey of styles and forms in documentary television. Examples of major television documentary programmes from Canada, USA, Europe. (3 credits)

COMMUNICATION ARTS 445-00
Explorations in the Cinema

Prerequisite: Open to all Univ. II and III students.

In-depth studies of specific artists or schools in film creativity. Concentration on the (film) art-object in its technique and overall aesthetic dimensions, to arrive at the artist's vision of the universe and his insights in terms of an evolving film form and evolving human sensibility. The specific cultural context within which artists evolve is also explored. Each of the following units is a half-term course. Units are given on a cyclic basis. (3 credits)

445A-01 Hollywood in the Silent Era.
The birth of American film art, with the Comics, Griffith, Stroheim; the career of Chaplin. (1976-77)

445A-02 Germany in the '20's.
Lang, Murnau, Pabst, Lubitsch, and the Expressionists, in Germany and in their later Hollywood careers. (1977-78)

445A-03 The Soviet Cinema in the '20's.
Eisenstein, Pudovkin, Dovzenko, Dziga-Vertov and the revolutionary film (1975-76)

445A-04 The Hollywood Genres.
Each year, concentration on a specific area and specific directors of the Hollywood of the '30's, '40's, '50's. (1976-77; 1977-78)

445A-05 The Classic French Cinema.
Renoir, Clair, Cocteau, Bresson, Ophuls in the '30's, '40's, '50's. (1975-76)

445B-06 La Nouvelle Vague.
Truffaut, Godard, Chabrol, Resnais, Varda, Rohmer, from the New Wave days to the present. (1975-76)

445B-07 The Scandinavians.
Bergman and the Swedes, Carl Dreyer, from the early days to the present. (1976-77)

445B-08 The Italians, from Neo-Realism to Today.
Rossellini, De Sica, Visconti, Fellini, Antonioni, Pasolini, Bertollucci. (1977-78)

445B-09 Shakespeare in the Cinema.
The Olivier, Welles, Russian, and other major filmings of Shakespeare's works, with study of corresponding plays and critical works. (1977-78)

445B-10 The Canadian Cinema.
The aesthetic, economic, and cultural dimensions of feature films in Canada. Course conducted in collaboration with Canadian Film directors, producers, critics.
1975-76: concentration on English-speaking film.
1976-77: concentration on French-speaking film.

COMMUNICATION ARTS 449Y
Communication Research

Prerequisite: Comm. Arts 303. An examination of the aids and practical methods for information chains. Limited experiments will be conducted on information complexes, e.g., 3D complexes, cinema, photography, holography, painted pictures, metacomplexes, and internal information spaces. Individual and group projects will be assigned. (3 credits)

COMMUNICATION ARTS 541B
Seminar In Media Forecast

Prerequisite: Comm. Arts Univ. III students. This course examines trends in film, sound, and television for upcoming media applications. The course includes theory of media effects. Industries and government will be invited to discuss future trends in media utilization. The course demands a theoretical model for original or novel use of a medium or mixed media. (3 credits)

COMMUNICATION ARTS 543Y
Communication Programming

Prerequisites: Comm. Arts 303, 449Y. An advanced seminar for students interested primarily in Communication Theory and Research. Individual projects will be assigned on the analysis of receiver responses, the design of programmes, the realization of pilot programmes, and the evaluation of measurement of the efficiency of these programmes. (3 credits)

COMMUNICATION ARTS 544Z
Advertising and Public Relations

Prerequisite: Open to all Univ. III students. With emphasis on communication analysis and experience, the course will examine advertising and public relations, and the societal uses of both. It will focus in a practical way, through analysis and critique, on the structure, effects, media choice and communication strategies in the operation of an actual campaign. Students will gain experience in both individual creation and actual campaign operation (6 credits)

GROUP C

COMMUNICATION ARTS 458Z
Photography as Visual Language

Prerequisite: Open to all Univ. II and III students and approval of instructor. Prior submission of portfolio required and students accepted must own camera and lenses. The course will consider the photographer as a man of responsibility as well as vision. It will explore areas of personal concern as interpreted with single and serial images, in the light of the fact that one sees through one's eyes and not with them. Weekly projects will be assigned. $50 charge for course materials. (6 credits)

COMMUNICATION ARTS 460Z
Fundamental Photographic Situations

Prerequisite: Open to all Univ. II and III students and approval of instructor. Students accepted must own camera and lenses. The course examines the demands of the medium as they arise in a wide range of shooting situations. Its purpose is to enable the student to understand what the camera "sees" and "takes" and to maximize what it "says". The method is a series of systematic assignments in which camera use becomes progressively more complex, e.g., situations involving space, objects in space, environment, persons, time and sequence, movement, the revealing moment. $50. charge for course materials. (6 credits)

COMMUNICATION ARTS 462Z
Communication of Ideas Through The Use Of Sound

Prerequisite: Comm. Arts 307 and 308. This course is designed to give students a full basic working knowledge of the technology and discipline of audio production as applied to radio, film, television, and audio-visual productions. Based on a verbal exchange of creative ideas, students will prepare individual sound projects, under tutorial guidance, in their own area of preference, ranging from simple to more complicated formats.

Discussions are based on analysis of (a) student's experiments in communicating with sound and (b) works from the commercial world of media. (6 credits)

COMMUNICATION ARTS 464Z
Intermediate Film Production

Prerequisite: above-average standing in Comm. Arts 308. Three short productions progressively acquaint students with equipment and procedures, and give an opportunity to explore a variety of film genres and styles. The fourth, normally a team production, provides more substantial scope for original and creative communication by the film medium. (6 credits)

COMMUNICATION ARTS 468Z
Intermediate Television Production

Prerequisite: Comm. Arts 308. This course explores the creative possibilities inherent in the television medium, the uses of the telecine chain and rear-screen projection, in-studio and on-location production and editing. The better original works of students are videotaped for playback and discussion. Criticism of programme series with emphasis on research and criteria for judgment (content analysis, programme value, relation to public arts). (6 credits)

COMMUNICATION ARTS 561Y
Computer Communication Programming

Prerequisite: Comm. Arts Univ. III students. Digital computer applications to media — film, radio, television complexes. Students work at samples of digital analog programmes, applicable for electronic generation of sound, video and graphics. (3 credits)

COMMUNICATION ARTS 580Z
Honours Project in Research, Film, Television, Sound, Or Multi-Media

Prerequisite: Comm. Arts Univ. III students. Towards the end of second year, students of demonstrated scholarly and creative ability may propose, or be selected for, a major research or production project in a Communications area of special interest. During third year, individually or in teams and in close collaboration with faculty directors, these students produce works acceptable for publication, public distribution or professional use. Projects normally emphasize a thematic approach, and require approval by a Senior Projects Committee. (6 credits)

51.8 Computer Science

Associate Professor and Chairman
D. C. WEST

Assistant Professors
B. C. DESAI
D. G. HALTRECHT
A. K. MENON

Lecturers
M. SMITH
G. WEISS

51.8.1 PROGRAMMES

90 BSc Specialization in Computer Science

Prerequisites: Math 231, 232, 233; Comp Sc 211, 241

Year I
6 Comp Sc 341A[3], 343B[3]
12 Math 334Z[6], 353A[3], 321A[3], 323B[3]
6 Nat Sc Elec (Bio, Chem, Geol, Phys, Psyc)
6 Elec

Year II
6 Comp Sc 223A[3], 311B[3]
6 Engin 135Z[6]
6 Math 402Z[6]
6 Nat Sc Elec (Bio, Chem, Geol, Phys, Psyc)
6 Elec

Year III
9 Comp Sc 451A[3], 533B[3], 551A[3]
15 Comp Sc Elec (400 or 500 level)
6 Elec

90 BSc Specialization in Mathematics & Computer Science

Prerequisites: Math 231, 232; Comp Sc 211, 241

Year I
6 Comp Sc 341A[3], 343B[3]
18 Math 321A[3], 323B[3], 334Z[6], 340Z[6]
6 Elec

Year II
6 Comp Sc 423A[3], 425B[3], 427B[3], 433A[3], 451A[3], 551A[3] or 561A[3]
15 Math 326Z[6], 402Z[6], 353A[3]
9 Elec

Year III
6 Comp Sc 424Z[6]
12 Comp Sc Elec
6 Math Elec
6 Elec

36 BSc Major in Computer Science

Year I
6 Comp Sc 341A[3], 343B[3]
6 Math 334Z[6]

Year II
6 Comp Sc 223A[3], 311B[3]
6 Math 353A[3]; 321A[3] or 323B[3]

Year III
6 Comp Sc 451B[3], 551A[3]
6 Comp Sc Elec

24 Minor, Scientific Computing

Year I
6 Comp Sc 211A[3], 241B[3]

Year II
6 Comp Sc 341A[3], 343B[3]

Year II or III
6 E-135Z[6]
6 Comp Sc Elec

24 Minor in Data Processing

Year I
6 Comp Sc 221A[3], 223B[3]

Year II
6 Comp Sc 311A[3], 313B[3]

Year II or III
6 Comp Sc 451A[3], 555B[3]
6 Comp Sc Elec

NOTE: the above courses are given in the BComm programme on the Loyola campus. See § 61.7.3

51.8.2 DEPARTMENT OF COMPUTER SCIENCE

Loyola Arts and Science offers a programme specializing in scientific computing. Degrees in data processing (see the calendar § 61.1 BComm programme) and in computer electronics (see § 71.10.3 Electrical Engineering) are also given on the Loyola campus.

The Bachelor of Science degree with specialization in Computer Science is intended to develop the potential computer scientist, and to reveal to the practicing scientist or

engineer the tremendous utility of the computer in his work.

Electives in related disciplines such as Mathematics, Natural Sciences and Engineering are designed to provide students with the varied scientific background needed by a computer scientist. Students in this programme study the use of computers in solving problems in scientific and engineering fields, learn about the principles governing computer languages and techniques, and about the computing machines themselves.

Students who intend to follow the Science programme must complete the introductory courses COMP SC 211 and 241 as part of their pre-university requirements, as well as MATH 231 and 233. Exemption from these courses may be allowed for students who have had equivalent training in other institutions.

If you are interested in more than one field of study, you may register for a BSc degree with a Major programme (36 credits) in Computer Science and a Major in any other branch of Science. This provides you with a broader knowledge, but cannot give you as complete and detailed a study of either subject as you would get from a Specialization.

If you are curious about computers but do not want to study them full time, you may find a course or two you can use as an elective. Ask the Department about arranging a Minor (24 credits) in Computer Science or Data Processing.

51.8.3 COURSE DESCRIPTIONS

COMPUTER SCIENCE 211
Introduction to Scientific Computing

Prerequisite: None. Coding of numerical and alphabetic data. General description of storage and 1/0 hardware. Organization and functioning of the central processing unit. The structure of a typical machine-language instruction and of a typical symbolic assembler-language program. The binary, octal and hexadecimal number systems. Flow charting and problem analysis. Elementary data structures. The use of interactive terminals and time-sharing. Mathematical models and methods used in typical applications in science and industry. Problems in simplified machine and assembler languages will be assigned, to be run on the computers.

Students with credit for Comp Sc 221 or 301 may not take this course for additional credit. (3 credits)

COMPUTER SCIENCE 221
Introduction to Business Computing

Prerequisite: None. An introductory course for students interested in the applications of computers in business and industry. Given in the BComm programme, Loyola campus. § 61.7.3 (3 credits)

COMPUTER SCIENCE 223
Data Processing Techniques

Prerequisites: Computer Science 211, 221 or 301. Given in the BComm programme, Loyola campus. § 61.7.3 (3 credits)

COMPUTER SCIENCE 241
Elementary Fortran Programming

Prerequisite: Computer Science 211 or 221. The course will cover the following topics: preparing and submitting programs documentation; real arithmetic; integer arithmetic, mixed-mode arithmetic, simple input and output; control statements; DO loops; subscripted variables; formats; and sub-programs. Regular assignments will be given, to be prepared, run, tested and documented by each student. Typically, the assignments will require a total of 15 to 30 hours of work outside of class. This course may not be taken for credit at the University level, by students in Engineering or BSc Computer Science programmes. Lectures: Two hours per week; one hour per week workshop problem sessions. Text: Cress, Dirksen & Graham, *Fortran IV with Watfor and Watfiv*. (3 credits)

COMPUTER SCIENCE 301
Computers in Society

Prerequisite: None. An introductory course for Arts students with no previous experience of computers. It covers the history of computers, the component parts of a computer, how human beings and computers pass information to each other, and what computers can (and cannot) be used for in the fields of education, research, business, medicine, art, government and the humanities. The effect of computers on society and the individual. Available as an elective for all students, but may not be taken for additional credit by students who already have credit for Comp Sc 211 or 221. (3 credits)

COMPUTER SCIENCE 311
Elementary COBOL Programming

Prerequisite: Computer Science 223. Given in the BComm programme, Loyola campus. § 61.7.3 (3 credits)

COMPUTER SCIENCE 341
Advanced FORTRAN Programming

Prerequisite: Computer Science 241. A continuation of Computer Science 241, using problems from numerical analysis as exercises in advanced Fortran programming. Operations involving logical, double-precision, complex and character-string variables. Extended input/output and format operations. Work load is typically 4 to 10 hours per week outside of class. Lectures: 2 hours per week. Problems: 1 hour per week. Text: Cress, Dirksen & Graham, *Fortran IV with WATFOR and WATFIV*. (3 credits)

COMPUTER SCIENCE 343
Computer Applications of Numerical Methods

Prerequisites: Computer Science 241 and Mathematics 233. Concepts of numerical errors, interpolation and curve fitting. Solution of nonlinear equations by iteration. Numerical integration. Matrix operations and solution of systems of linear equations. Numerical solution of ordinary differential equations. Emphasis will be on the algorithms and standard subroutines available to solve these problems, and on practical computing experience rather than on mathematical study. Lectures: 2 hours per week. PROBLEMS: 1 hour per week. (3 credits)

NOTE: Comp Sc 341 and 343 were formerly taught together as the full course Comp Sc 340

COMPUTER SCIENCE 423
Assembler Language Programming I

Prerequisite: Computer Science 311 or 341. Review of the basic concepts of IBM 360/370 architecture and instruction repertoire. Memory access and storage. Detailed flowcharting of problems. Rules for coding assembler language programs, including use of base registers, program linking and sectioning and the use of macro instructions. Documentation, debugging and testing of programs. Students will write and run several programs on an IBM 360/75 computer. Work load is typically 4 to 10 hours per week outside of class. Text: G. Kapur, *Assembler Language Programming*. (3 credits)

COMPUTER SCIENCE 424
Computer Applications of Statistics

Prerequisites: Computer Science 241 and one statistics course. This course is designed to familiarize the student with the application of computers to statistical problems. Computer ter-

minals and batch processing of Fortran programs are used to develop a working knowledge of standard programs for control charts, analysis of experimental design, sampling plans, forecasting, and statistical analysis common to many other fields. Students are expected to be familiar with elementary statistics and to be able to program in FORTRAN. (6 credits)

COMPUTER SCIENCE 425
Mathematical Models of Real Systems

Prerequisite: Computer Science 241 or 311; Mathematics 233 or Quantitative Methods 244. Given in the BComm programme, Loyola campus. § 61.7 (3 credits)

COMPUTER SCIENCE 427
Assembler Language Programming II

Prerequisite: Computer Science 423. Continuation of Computer Science 423. Further exercise in assembler language programming for the IBM 360/370. A study of assembler languages for other computers, including UNIVAC 9300 and the DEC PDP-11. Work load is typically 4 to 10 hours per week outside of class. Text: N. Chapin, *360/370 Assembler Language Programming*. (3 credits)

COMPUTER SCIENCE 429
Teleprocessing

Prerequisite: Computer Science 223. Given in the BComm programme, Loyola campus. § 61.7 (3 credits)

COMPUTER SCIENCE 433
PL/1 Programming

Prerequisite: Computer Science 311 or 341. Study of the basic rules and important features of the PL/1 language. This will be integrated with the solution of a variety of practical computer programming problems, both scientific and commercial. Work load is typically 5 to 10 hours per week outside of class. (3 credits)

COMPUTER SCIENCE 451
File Structures

Prerequisite: Computer Science 241 or 313. Given in the BComm programme, Loyola campus. § 61.7 (3 credits)

COMPUTER SCIENCE 533
Computer Operating Systems

Prerequisite: E-135. Review of computer system organization and control. Input-output routines. Job control programs for batch processing; translating, loading, linking, execution and accounting. File control systems for parallel input-output processing. The management of interrupts, buffers, spooling and memory protection. Operating systems for multiprogramming computers. Time-sharing systems, and interactive processors with real-time application. (3 credits)

COMPUTER SCIENCE 551
Theory of Automata

Prerequisite: E-135. Theoretical description of computing machines. Finite state automata and sequential machines. The equivalence of states and machines; congruence; reduced machines; analysis and synthesis of automata. Turing and other machines. Recursion and decidability. Text: M. Minsky, *Computation, Finite and Infinite Machines*. (3 credits)

COMPUTER SCIENCE 561
Computer Science Seminar and Project I

Prerequisite: Consent of the Department. Individual work on a computer science project under the supervision of a faculty member, and a series of seminars dealing with topics of current interest by faculty members, students and industry representatives. At least 60 hours of work must be done on a project approved in advance, including the submission of a technical report. Special arrangements can be made with the Department to accept a project carried out by a student employed in a commercial firm. (3 credits)

COMPUTER SCIENCE 563
Computer Science Seminar and Project II

Prerequisite: Computer Science 561. A continuation of the project begun in Computer Science 561. (3 credits)

ENGINEERING E. 135
Introduction to Digital Computer Engineering

Prerequisite: Computer Science 241. Given in the Faculty of Engineering, Loyola campus. § 61.7 (6 credits)

NOTE: The following courses may also be taken as Computer electives on the Loyola campus:

BComm programme (§ 61.7) Comp Sc 313, 417, 419, 421, 523, 555
Faculty of Engineering § 71.10.4
E-168

51.9 Department of Economics

Associate Professor and Chairman
S. A. ALVI

Associate Professors
F. J. HAYES
A. G. LALLIER

Lecturer
D. A. BERARDINUCCI

Assistant Professors
N. ISLAM
Z. R. LIU
D. K. OTCHERE
A. TAKAHASHI
B. WRIGHT

51.9.1 PROGRAMMES

60 BA Honours in Economics

Year I
12 Ec 309A[3], 311B[3], 322Z[6]
Year II
12 Ec 404Z[6], 600 level[6]
Year III
12 Ec 665A[3], 681B[3], 600 level[6]
24 Other Ec Elec divided over the three years. With the permission of the Department, 12 of these credits may be selected from a related discipline.

60 BA Specialization in Economics

Year I
6 Ec 309A[3], 311B[6]
Year II
6 Ec 404Z[6]
48 Other Ec Elec divided over the three years. With the permission of the Department, 12 of these credits may be selected from a related discipline.

30 Minor in Economics

Year I
6 Ec 309A[3], 311B[3]
24 Other Ec Elec divided over the three years.

36 BA Major in Economics

Year I
6 Ec 309A[3], 311B[3]
Year II
6 Ec 404Z[6]
12 Ec Elec
Year III
12 Ec Elec

NOTE: 1. The courses required for each programme must be taken in an approved sequence. 2. Ec 300 or 302 will count as one of the Ec elec in the case of students who are admitted without "Principles of Economics" or an equivalent course.

51.9.2 DEPARTMENT OF ECONOMICS

Admission into the Honours Programme requires approval of the Department following a recommendation from its Honours Committee. The maintenance of honours standing requires a 65% minimum in each economics course and an overall average of 65% for all courses. The Honours Programme consists of Economics 309[3], 311[3], 322[6], 404[6], 665[3], 681[3], other 600 level[12] and other Economics electives[24].

A Specialization in Economics consists of Economics 309[3], 311[3], 404[6], and other Economics electives[48].

A Major in Economics consists of Economics 309[3], 311[3], 404[6], and other Economics electives[24].

A Minor in Economics consists of Economics 309[3], 311[3], and other Economics electives[24].

"Principles of Economics", or equivalent, is a prerequisite for all other Economics courses, except Economics 304. Additional prerequisites are indicated below each course. Alternative prerequisites in Economics or other disciplines may be approved by the Department.

51.9.3 COURSE DESCRIPTIONS

ECONOMICS 300Z
Principles of Economics
A survey of the existing economic order, with particular emphasis on the Canadian Economy. Concentration is on explaining the operation of the price system as it regulates production, distribution and consumption, and as it in turn is modified and influenced by private organization and government policy. Consideration is also given to the

determination of aggregate economic activity; the monetary and banking systems in the United States and Canada; the composition and fluctuations of national income; the major conditions of economic growth; all as influenced by monetary, fiscal and other policies. (6 credits)
NOTE: This course is not available to students who have received credit for an equivalent course.

ECONOMICS 302Z
Principles of Economics
This course is for students not majoring in Economics or Commerce. Its content is essentially the same as that of Economics 300. However, there is greater emphasis on Canadian economic institutions and government policies. (6 credits)

ECONOMICS 304Z
Economic History
An analysis of the economic development of Western Europe, Canada and the United States. (6 credits)

ECONOMICS 307B
The Chinese Economy
This course is devoted to an analysis of Chinese economic development since 1949. Topics include: performance and efficiency, strategy for development, agricultural organization, the contribution of policy to economic growth, the industrial sector, control and allocation of resources, national economic planning. (3 credits)

ECONOMICS 309A
Intermediate Micro-Economic Theory
In this course consideration will be given to such topics as: theory and measurement of demand, production functions, cost analysis, price and output policy under various market conditions, factor pricing, general equilibrium, and the social welfare optimum. (3 credits)

ECONOMICS 311B
Intermediate Macro-Economic Theory
An analysis of the major areas of aggregate economics. The definition and measurement of national income, the theory of income determination, monetary theory, growth and fluctuation, policy implications. (3 credits)

ECONOMICS 322Z
Mathematics for Economists
Prerequisite: Mathematics 101 or equivalent. An introductory application of mathematics to economic analysis. Topics: analytic geometry, differential and integral calculus, differential and difference equations, elements of linear algebra. Selected economic applications will be considered throughout the course. (6 credits)

ECONOMICS 338Z
Contemporary Economic Issues
An analysis of some economic issues facing Canada. For example: unemployment, inflation, monopoly and competition, foreign ownership and control, income distribution, regional disparities, monetary and fiscal policies, etc. Theoretical concepts will be developed as needed. (6 credits)

ECONOMICS 401A
Theories of Economic Growth
The meaning and concept of economic growth, measurement of growth, economic and non-economic factors of growth, the concept of scarcity of resources and their allocation, stages and models of growth, obstacles to growth, human and physical capital and economic growth, foreign trade and foreign aid; developing economies and economic policies and the development of nations. (3 credits)

ECONOMICS 403B
Planning for Economic Growth
The meaning and concept of economic planning, methodology and strategy of planning, input-output and sector analysis, techniques of planning, investment criteria and priorities, study and appraisal of economic plans of a few countries. (3 credits)

ECONOMICS 404Z
Statistical Methods
Prerequisite: Economics 309. The application of statistical methods to economic problems, including probability, testing hypotheses, time series, correlation and linear regression analysis. (6 credits)

ECONOMICS 405B
Economic Fluctuations
Prerequisite: Economics 311. A review of some theories of causes of economic fluctuations. Discussion of the economic climate and of stabilization policies. (3 credits)

ECONOMICS 407A
Money and Banking
Prerequisite: Economics 311. The functions of money, money and prices, the evolution and kinds of money, the value of money, the supply of money, monetary and banking developments in Canada, monetary theory, international monetary system, monetary policy. (3 credits)

ECONOMICS 411A
Economics of Transportation and Communications
Prerequisite: Economics 309. Demand, cost and pricing in the transportation and communications industry; implications for development and for the location of industry; public policies. (3 credits)

ECONOMICS 434Z
Comparative Economic Systems
Prerequisite: Economics 309. The evolution of economic systems is discussed and evaluated in terms of modern economic theory, and from the point of view of economic efficiency and development. (6 credits)

ECONOMICS 438Z
Labour Economics
This course deals with labour force concepts and analysis; labour markets and other aspects of demand for and supply of labour; population, immigration and participation rates; theory of wages; structure and determination of wages; minimum wage and manpower policies. Emphasis will be on the Canadian institutions. (6 credits)

ECONOMICS 448Z
Industrial Relations
Study of industrial relations and industrial relations system; philosophies and growth of trade union movement; philosophies and practices of management; collective bargaining; industrial disputes and their settlement; weapons of conflict; automation, inflation and unemployment; labour management co-operation in achieving social goals. Emphasis will be placed on industrial relations in Canada. (6 credits)

ECONOMICS 504Z
Economic Development of Canada
This course will explore the development of Canada from the early days of settlement to the present time. Emphasis will be placed on economic development since 1867. Particular attention will be given to development in the Province of Quebec. (6 credits)

ECONOMICS 507A
International Trade
Prerequisites: Economics 309 and 311. The basis of international trade, gains from trade, factoprice equalization, the tariff, Canadian commercial policy, trade and development, economic integration. (3 credits)

ECONOMICS 509B
International Finance
Prerequisite: Economics 507. International monetary economics, foreign exchange markets, adjustment mechanisms, capital flows, balance of payments and domestic policy goals, international liquidity. (3 credits)

ECONOMICS 535B
Public Finance
The expenditures and revenues of government;

equity and efficiency, the nature and costs of publicly-provided goods and services; the budget; public debt, federal — provincial — local government fiscal relations. (3 credits)

ECONOMICS 538Z
Regional Economics

Prerequisites: Economics 309 and 311. Regional economic analysis, regional accounts, inter-regional trade, industrial location regional disparities, the regional distribution of resources and their relevance for development, characteristics of the resource industries, inter-regional migration, the impact of foreign investment and control, the city and the region, federal and provincial policies. (6 credits)

ECONOMICS 540Z
Economics of Social Welfare

Prerequisites: Economics 309 and 311. This course will be devoted to an examination of the economic aspects of social welfare issues in Canada. Topics will include: employment and unemployment; manpower problems and policies; inequality, poverty, social insurance and social assistance; investment in man, especially education and health; urban and regional development; environmental economics; federal, provincial, and municipal policies. (6 credits)

ECONOMICS 545A
Structure of the Economy and Public Policy

Prerequisite: Economics 309. Structure of the Canadian and U.S. economies; the determinants of market structure; theory and empirical evidence relating to price and output policies in different market structures; policies. (3 credits)

ECONOMICS 563B
Economics of Socialism

Prerequisites: Economics 309 and 311. The economic theory of socialism; Soviet, Yugoslav and other economies; problems of planning and development. (3 credits)

ECONOMICS 611A
Welfare Economics

Prerequisite: Economics 309. This is an advanced course for Honours students; and for Major students with the consent of the professor. The course will be devoted to an examination of selected topics in contemporay welfare economics and its applications. (3 credits)

ECONOMICS 655B
Advanced Statistical Methods

Prerequisites: Economics 309 and 404. This is an advanced course for Honours students; and for Major students with the consent of the professor. Topics to be covered in this course include: classical linear regression; problems arising out of errors in variables; autocorrelation; multicollinearity; heteroscedasticity; use of lagged and dummy variables; simultaneous equation problems (3 credits)

ECONOMICS 662Z
History of Economic Thought

Prerequisites: Economics 309 and 311. This is an advanced course for Honours students; and for Major students with the consent of the professor. An analysis and critical review of the evolution of economic thought from Plato and Aristotle to post-Keynesian economics. (6 credits)

ECONOMICS 665A
Advanced Micro-Economic Analysis

Prerequisites: Economics 309 and 322. This is an advanced course for Honours students; and for Major students with the consent of the professor. Mathematical exposition of the theory of consumer behaviour and demand; theory of production and cost; theory of the firm and market organization; theory of distribution. (3 credits)

ECONOMICS 681B
Advanced Macro-Economic Analysis

Prerequisites: Economics 311. This is an advanced course for Honours students; and for Major students with the consent of the professor. The course will cover a number of selected topics, including the Classicals and Keynes and post-Keynesians; liquidity preference and loanable funds; money and real interest rates; monetary theory and its applications. (3 credits)

ECONOMICS 671A
Operations Analysis

Prerequisites: Economics 309 and 322. This is an advanced course for Honours students; and for Major students with the consent of the professor. Topics include linear programming and input-output analysis; basic concepts and solutions of linear programming, its application to optimum resources allocation; exposition of basic inter-industry theory with the framework of input-output techniques; its applications to structural analysis. (3 credits)

ECONOMICS 681B
Advanced Macro-Economic Analysis

Prerequisite: Economics 311. This is an advanced course for Honours students; and for Major students with the consent of the professor. A critical examination of selected topics in aggregative economic analysis. (3 credits)

ECONOMICS 691
Honours Thesis

An Honours thesis including independent reading and research under the supervision of a professor. (3 credits)

51.10 Department of English

Associate Professor and Chairman
J. S. HERZ

Associate Professors
A. T. BROES
A. NEWELL
M. PHILMUS
R. PHILMUS
R. S. WAREHAM
J. P. ZUCKERMANN

Assistant Professors
E. CAMERON
L. R. HALLETT
P. J. HOLLAND
R. K. MARTIN
L. P. NOWICKI
D. TAYLOR
K. E. WATERS

Lecturers
M. DAGG
H. HILL

51.10.1 PROGRAMMES

60 BA Honours in English

The following courses constitute an honours programme provided the student maintains the required academic standing.

Year I

12 Engl 400Z[6], 401A/B[3], 402Z[6], 403A/B[3], 404Z[6], 405A/B[3], 461A/B[3]

6 Engl 303A/B[3], 305A/B[3], 406Z[6], 410Z[6], 448Z[6], 454Z[6], or Class. 311A[3], 313B[3]

Years II and III

6 Engl 418Z[6]

9 Engl 408Z[6], 409A/B[3], 410Z[6], 411A/B[3], 412Z[6], 413A/B[3], 415A/B[3], 417A/B[3], 424Z[6], 501A/B[3], or 503A/B[3]

9 Engl 417A/B[3], 424Z[6], 425A/B[3], 426Z[6], 427A/B[3], 429A/B[3], 431A/B[3], 432Z[6], 433A[3], or 435B[3]

6 Engl 436Z[6], 437A[3], 439B[3], 441A[3], 442A/B[3], 443B[3], or 444Z[6]

12 Engl Elec (up to six credits may be chosen from an approved cognate course)

The Honours programme satisfies all the requirements of the Specialization. It is particularly recommended for students intending to pursue Graduate studies in English literature.

72 BA Joint Honours in English and History

6 Engl 418Z[6]

18 Engl credits chosen from three different periods, at least two of which should be supported by parallel Hist courses.

6 Engl Elec

6 Engl or Hist Elec

12 Hist credits to parallel Engl courses.

12 Hist Honours Seminars

6 Hist Elec

6 Joint Engl / Hist Tutorial, Engl 590Z[6] or Hist 590Z[6]

72 BA Joint Honours in English and Modern Languages

6 Engl 418Z[6]

18 Engl credits chosen from three different periods to parallel Modern Language courses.

6 Engl Elec

18 Credits chosen from *one* modern language in different periods to parallel English courses.

12 Elec from *one* modern language.

6 Engl or Modern Language Elec

6 Joint English / Modern Languages Tutorial, Engl 592Z[6]

72 BA Joint Honours in English and French

See description of programme § 51.12.1, under the listings for Etudes Françaises.

60 BA Specialization in English

Year I

12 Engl 400Z[6], 401A/B[3], 402Z[6], 403A/B[3], 404Z[6], 405A/B[3], 461A/B[3]

6 Engl 303A/B[3], 305A/B[3], 406Z[6], 410Z[6], 448Z[6], 454Z[6], or Class. 311A[3], 313B[3]

Years II and III

.6 Engl 418Z[6]

18 Credits to be chosen from three different periods of English literature.

18 Engl Elec (up to six credits may be chosen from an approved cognate course).

60 BA Specialization in English and History

12 Engl credits chosen from two different periods which should be supported by parallel History courses.

18 Engl Elec

12 Hist credits to parallel Engl courses.

18 Hist Elec

NOTE: This programme replaces the Joint Majors programme.

60 BA Specialization in English and Modern Languages

6 Engl 418Z[6]

12 Engl credits chosen from two different periods to parallel Modern Language courses.

12 Engl Elec

12 Credits chosen from *one* modern language in *two* different periods to parallel Engl courses.

18 Elec chosen from one modern language.

NOTE: This programme replaces the Joint Majors programme.

60 BA Specialization in English and Drama

6 Engl 418Z[6]

9 Engl 401A/B[3], 417B[3], 429A/B[3]

15 Engl Elec

3 Drama 301A[3]

3 Drama 351B[3]

3 Drama 361A[3] or B[3]

6 Drama 341Z[6]

6 Drama 401A[3], 451B[3], 501A[3], 551B[3]

9 Drama Elec

42 BA Major in English

Year I

12 Engl 400Z[6], 401A/B[3], 402Z[6], 403A/B[3], 404Z[6], 405A/B[3], 461A/B[3]

6 Engl 303A/B[3], 305A/B[3], 406Z[6], 410Z[6], 448Z[6], 454Z[6] or Class 311A[3], 313B[3]

Years II and III

.6 Engl 418Z[6]

12 Credits chosen from the list of Honours and Majors courses covering at least two different periods before the 20th century.

6 Engl Elec

51.10.2 DEPARTMENT OF ENGLISH

300 level courses are open to all students and may be used as English electives unless otherwise indicated.

400 and 500 level courses are normally restricted to students taking Honours, or Majoring in English.

Students may take half of a six credit course for three credits if a staisfactory arrangement can be worked out with the professor.

It is to be noted that the courses listed here constitute the total offering of the English Department. Not all courses are offered in any one year. Consult department brochure for accurate information concerning offerings and scheduling.

51.10.3 COURSE DESCRIPTION

ENGLISH 100 (formerly 223)
English Language

A remedial course for students whose native language is not English and who, as a result, experience some difficulty in following their courses. (no credit)

NOTE: Under special circumstances, this course may serve as the equivalent of 6 pre-university credits, consult chairman.

ENGLISH 101Z
Introduction to Literature and Composition

Selected readings from various periods and genres, designed to provide familiarity with some of the possibilities of the literary art. Students will be asked to write frequently and will be given training and assistance in the skills of composition. (6 credits)

NOTE: This is the standard pre-university course and is required for all students who have not completed a CEGEP English course or its equivalent.

Other students may receive university credit for this course if they earn a minimum grade of 60.

ENGLISH 300Z
Critical Reading
The aim of this course will be, through the examination of various kinds of discourse, to encourage and develop in students the ability to read critically. (6 credits)

ENGLISH 301A/B
Style in Writing
Designed for the student who can spell and construct sentences, but would like assistance in matters of structure, emphasis, fluency, diction and logic (3 credits)
NOTE: May not count toward the English Major.

ENGLISH 302Z
Rhetoric
An inquiry into the nature and function of Rhetoric (classical and "New"), and of rhetorical criticism; a study of the fundamentals, and some of the refinements, of prose style; logical and rhetorical analysis, and original compositions. (6 credits)

ENGLISH 303A/B
Major Developments in English Literature I
This course aims to produce a better understanding of important artistic and intellectual developments from the middle ages to the end of the seventeenth century through a close study of some major, but not simply "typical", literary works. The course will be designed to be of help both to English majors desiring a background and framework for their period courses and to general arts students desiring to broaden their familiarity with literature. (3 credits)

ENGLISH 305A/B
Major Developments in English Literature II
A continuation of English 303A/B, concentrating on the eighteenth, nineteenth and twentieth centuries. (3 credits)

ENGLISH 304Z
Comedy
An examination of the techniques and theories of comedy as seen in selected readings in 18th, 19th, 20th century English and American literature. (6 credits)

ENGLISH 306Z
Shakespeare
Students will not only read a number of Shakespeare's plays but will also attend performances of them, as available. Scenes will be considered in terms of staging various possible interpretations, and the class may assist with a production. The course is intended to develop an appreciation of Shakespeare's plays as works for the stage. (6 credits)

ENGLISH 307Z
Translation
Prerequisite: Fluency in both French and English. Intensive work to improve the student's skill at translating a variety of texts from French to English. Emphasis will be placed on non-literary texts. Training will be given in style and idiom. The course will help the student gain proficiency in rendering a variety of French texts in idiomatic English prose. (6 credits)

ENGLISH 308Z
Studies in Drama
This course will study different kinds and periods of drama each year. (6 credits)

ENGLISH 309A
Literary Theatre
Prerequisite: Entrance by permission of the instructor. Drama as theatre. Students interested in dramatic literature will study plays from the point of view of production through preparation of scenes for class workshop. The course may build towards a public performance. (3 credits)

ENGLISH 311B
Literary Theatre in Theory and Practice
A contination of English 309 A
(3 credits).

ENGLISH 310Z
Tragedy
The course will explore tragedy as a challenge to the complacency of viewers, to the artistic and human abilities of the dramatists, and the conceptualizations of the critics. Examples will be drawn from Greek, Elizabethan and Modern drama. (6 credits)

ENGLISH 312Z
The Oral Interpretation of Poetry and Drama
The aim of this course is to produce a deeper appreciation of the rhythm and texture of the written word. We shall choose scenes from plays and study the relationship of dialogue to character, emphasis to meaning. (6 credits)

ENGLISH 314Z
Time and The Drama
The course will consider plays from a wide variety of periods and theatres, concentrating on the effects upon dramatic form of the necessary time-limit on the length of a play, on the immediacy of dramatic presentation, and on the resulting interest in time as a theme in drama. (6 credits)

ENGLISH 316Z
Shakespeare and Some Modern Writers
A study of some ideas and preoccupations in plays of Shakespeare in the context of their treatment in later literature. We will study, for example, *King Lear* and *Waiting for Godot; Hamlet* and *Rosencrantz and Guildenstern; Antony and Cleopatra* and *A Farewell to Arms.* (6 credits).

ENGLISH 318Z
Epic Forms In Modern Fiction
The course is designed to examine epic structures and modes in representative works of English and American fiction of the nineteenth and the twentieth centuries. (6 credits)

ENGLISH 319A
Twentieth Century British Literature I
To the end of World War I: Conrad *(Heart of Darkness),* Hardy (a few selected poems), Bernard Shaw, Joyce *(The Dead* and *Portrait of the Artist),* Lawrence, Yeats (selected poetry), Wilfred Owen (selected war poetry). (3 credits)

ENGLISH 321B
Twentieth Century British Literature II
Post World War I to the Present: from among T.S. Eliot, E.M. Forster, Virginia Woolf, Waugh, Auden, Beckett, Osborne, Sillitoe, Pinter, Doris Lessing, Anthony Burgess, contemporary poets. (3 credits)

ENGLISH 323A
Modern American Fiction
The twentieth century American novel up to 1945. Authors read will include Dreiser, Faulkner, West, H. Roth and Wright. (3 credits)

ENGLISH 325B
Contemporary American Fiction
The twentieth century American novel since 1945. Authors read will include Faulkner, Warren, F.O'Connor, Bellow and Mailer. (3 credits)

ENGLISH 326Z
The Psychological Novel
Study of the development of the modern psychological novel from the nineteenth century to the present, with emphasis upon the interrelationship between psychology and literature. Part of the course will focus on material other than the novel. Close analysis of the tendency to portray the subjective world by means of dream, interior monologue, and stream of consciousness will be stressed. (6 credits)

ENGLISH 327A/B
Twentieth Century American Literature

A selective study of major fictional works of twentieth-century American Literature to be chosen from amongst the following: Anderson, Fitzgerald, Hemingway, West, Steinbeck, Mailer, Kerouac, and Ellison. (3 credits)

ENGLISH 328Z
The Modern Novella

Short novels by Melville, James, Dostoevsky, Tolstoy, Conrad and other major nineteenth and twentieth-century American and European authors. (6 credits)

ENGLISH 331Z (Formerly English 335 Evening Division)
The Short Story

The aims of this course are to familiarize students with the forms and techniques of the short story and to discover something of the considerable depth and breadth of experience that an accomplished writer can concentrate into the microcosm of this particular form of fiction. (6 credits)

ENGLISH 332Z
Psychology and Literature

A study of the relationship between the basic theories of psychology and psychoanalysis and aesthetics and literary criticism, through a consideration of the Oedipus complex in *Oedipus Rex, Hamlet,* and *Sons and Lovers* and of archetypes and mythic patterns in literary and pseudo-literary forms, such as fairy tales, children's stories and comic strips. (6 credits)

ENGLISH 333A
Canadian Literature I

Through readings in both fiction and poetry, this course will examine themes and styles in Canadian Literature. (3 credits)

ENGLISH 335B
Canadian Literature II

Same description as English 333 A. (3 credits)

ENGLISH 334Z
Introduction to American Studies

An interdisciplinary consideration of the elements that go toward making up the "American Character" and the nature of art and culture in America: studies in literature, history, sociology, psychology, religion and fine arts. (6 credits)

ENGLISH 336Z
American Writers of the '20s

A study of the American expatriate generation of the 1920s, with particular emphasis on Fitzgerald, Hemingway, Gertrude Stein, and their relationships with the cultural and artistic milieu centered in Paris. (6 credits)

ENGLISH 337A
Women and Literature I

A selection of short stories, poems and plays (by Ibsen, Lawrence, Mailer, Pinter, Plath, Lessing, Atwood, Alice Munro, Gwendolyn MacEwen and others) in which woman is of major importance, either as the central experiencing character in adolescence, maturity and old age, or as the embodiment of sexual archetypes and social roles. (3 credits)

ENGLISH 339B
Women and Literature II

Prerequisite: English 337A or a course which has stressed the novel as a form. A study of some women novelists emphasizing Charlotte Bronte, Virginia Woolf, Doris Lessing and Margaret Atwood, and including a few others from among George Eliot, Jean Rhys, Sylvia Plath, Margaret Drabble, Margaret Laurence, Marian Engel, Sheila Watson, Alice Munro. (3 credits)

ENGLISH 340Z
The Novel and its Relation to Twentieth-Century Art Theory

Prerequisite: This course is limited to second and final-year students. A study of the twentieth-century novel as symptomatic of the profound changes in European thought on art occuring at the end of the nineteenth and beginning of the twentieth century. The course is largely concerned with the premise that the phenomenon of literary art is greatly clarified by approaching it from an understanding of the aims and capacities of other art forms. In addition to the consideration of a limited number of theoretical texts the course includes the practical study of, among others, the novels of Virginia Woolf, Galsworthy , James Joyce, E.M. Forster, Joyce Cary and Lawrence Durell. (6 credits)

ENGLISH 341A/B
Continental Literature

An introduction to the major works of European literature of the nineteenth and twentieth centuries. Intended as background for students of English or French literature. Readings will include Goethe's *Werther* and *Faust*, Dostoevsky's *Crime and Punishment*, Mann's *Death in Venice*, Weiss' *Marat/Sade*, among others. The works will be treated from a comparative, an historical and an intrinsic point of view. (3 credits)

ENGLISH 342Z
Nineteenth Century Fiction

Emphasis will be on the variety of fictional modes and styles used during this period, and their relevance to the social and intellectual history of the age. (6 credits)

ENGLISH 343Z
Anglo-Irish Literature

Emphasis on the major English language writers of Ireland, notably O'Casey, Synge, Lady Gregory, Joyce, Yeats and Beckett. (6 credits)

ENGLISH 345A/B
Poetry

An introduction to the methods of reading poetry. (3 credits)

ENGLISH 346Z
Literature: Ideas and Myths

An exploration through literature of some of the myths which generate our ideas and some of the ideas which rationalize our myths. A study of *Gilgamesh, The Republic of Plato, Antony and Cleopatra, The Marriage of Heaven and Hell, Crime and Punishment, 2001* and other works. (6 credits)

ENGLISH 348Z (350Z)
Writing Workshop

Intensive and individualized work in Creative Writing. The genre (prose, poetry, etc,) will vary from year to year. (6 credits)
NOTE: Students who have already taken the course as 348Z can register for it as 350Z.

ENGLISH 351Z
Modern Fiction

A study of major modern fiction both North American and Continental. (6 credits)

ENGLISH 352Z
Modern Drama

The discussion will center on major works of the most influential British, Continental, and American dramatists. (6 credits)

ENGLISH 355A
Commonwealth Literature I

Studies in the literature of Canada, Australia and New Zealand; selected novels and some poetry. (3 credits)

ENGLISH 357B
Commonwealth Literature II

Studies in the literature of Commonwealth Africa and the East. (3 credits)

ENGLISH 360Z
Children's Literature

A look at some of the books that can turn out to be about something quite different from what they were about the last time you read them (and the time before that). Among works to be studied will be: *The Blue Fairy Book* edited by Andrew Lang,

Alice in Wonderland by Lewis Carroll, *Peter Pan* by J.M. Barrie, *Charlotte's Web* by E.B. White, *Squirrel Nutkin* by Beatrix Potter, and *Wizard of Oz* by Frank L. Baum. (6 credits)

ENGLISH 362Z (Formerly 359A, 361B)
The Bible as Background to English Literature
The course will begin by considering which translations of the Bible had the greatest influence on English literature and then will proceed to a study of literary handling of Biblical material and literary uses of Biblical allusion. (6 credits)

ENGLISH 363Z
Canadian Criticism, Thought, and Controversy
Prerequisite: One course in Canadian literature. An examination of the origins of literary criticism in Canada and the main aspects of its development to the present. The following critics will be considered: E. K. Brown, Edmund Wilson, H. A. Innes, G. Grant, Northrop Frye, Marshall McLuhan, Milton Wilson, George Woodcock, D. G. Jones, Margaret Atwood. (6 credits)

ENGLISH 370Z
Science Fiction
An exploration of the varieties and nature of science fiction from H. G. Wells to Ursala LeGuin. Readings will include examples of English and American science fiction and translations of foreign works. Among the authors studied will be Huxley. Orwell, Zamyatin, Jack London, Capek, Borges, Calvino, and Lem. (6 credits)

INTERDISCIPLINARY STUDIES 326Z
Alienation — English and French Canadian Literature
For Course Description see § 51.15.12 (6 credits)

NOTE: This course may be taken as an English elective.

ENGLISH 400Z
Practical Criticism
Through an examination of how language works, in ordinary life as well as in literature, this course will aim at developing discrimination, and a greater understanding and appreciation of linguistic and literary skills. (6 credits)
NOTE: This course may be offered some years for three credits as English 400A/B.

ENGLISH 401A/B
Drama
A study of a varied selection of plays from both an historical and a generic point of view that will introduce students to the problems and delights of reading, visualizing, making and seeing plays. (3 credits)

ENGLISH 402Z
Fiction
A selective study of the novel as form, the works to be chosen from English and American fiction. Close textual analysis, psychic and archetypal patterns, and the development of technique will be emphasized. (6 credits)

ENGLISH 403A/B
Fiction
Course description same as 402Z. (3 credits)

ENGLISH 404Z
Understanding Poetry
The concepts and methods of reading poetry, beginning with simple examples and proceeding through poems of graduated difficulty. Recommended for students who would really like to learn how to understand poetry. (6 credits)

ENGLISH 405A/B
Poetry
A course for honours and majors students who would like to know why "what oft was thought" was "ne'er so well expressed." The emphasis will be on the variety of ways by which a poem translates a private perception into a communicated perception. (3 credits)

ENGLISH 406Z
The Rise of Prose Fiction
The course will explore the origin and development of European fiction in major works of the Middle Ages and the Renaissance, giving particular attention to their varying sources of inspiration, the narrative techniques they evolve, and the basic genres they establish. (6 credits)

ENGLISH 408Z
History of the English Language
A study of the development of the language from its beginnings to the twentieth century: a course designed partly for those students intending to go on to further studies in English at graduate school, and partly for those interested in languages in general. (6 credits)

ENGLISH 409A/B
Chaucer I
A study of *The Canterbury Tales* in general, and of six or seven tales in particular. (3 credits)

ENGLISH 410Z
Masterpieces of English Literature Written Before 1603
A course designed to introduce the student to the origin and development of English literature in the Anglo-Saxon, Medieval and Tudor periods. *Beowulf* (in translation). Anglo-Saxon culture and poetry (in translation). Introduction to the works of Chaucer, Malory, and other works from the period after 1066. Introduction to Spenser and other representative authors of the Tudor period. Introduction to the origin and development of drama before Shakespeare. Introduction to the history of the English language up to 1603. (6 credits)

ENGLISH 411A/B
Chaucer II
Prerequisite: English 409A/B. A study of *Troilus and Criseyde* and selected early poems. (3 credits)

ENGLISH 412Z
Medieval Literature
A study of the literature from the 12th century through Malory, exclusive of Chaucer. The major emphasis will vary from year to year, e.g. Medieval drama, romance, Langland, the *Pearl* poet. (6 credits)

ENGLISH 413A
Spenser and his Background
This course is intended to examine Spenser's works — *The Amoretti* and *The Faerie Queene* in particular — and their relations to the pertinent literary traditions, both English and continental. (3 credits)

ENGLISH 415B
Elizabethan Prose and Poetry
Significant works of Elizabethan non-dramatic literature will be studied both as individual creations and as samples of the most important trends in non-dramatic verse and prose of the time. (3 credits)

ENGLISH 417B
Elizabethan and Jacobean Drama
Representative plays to be read will be selected from the works of some of the following contemporaries of Shakespeare in the golden age of English drama: Kyd, Marlowe, Lyly, Heywood, Jonson, Webster, Tourneur, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford. (3 credits)

ENGLISH 418Z
Introduction to Shakespeare
An introduction to a wide range of Shakespeare's plays and some of his non-dramatic poetry. (6 credits)

ENGLISH 423A/B
Advanced Studies in Shakespeare
Prerequisite: English 418 or suitable introductory course. Intensive study of a selected topic in Shakespeare, the exact nature of the topic to vary from semester to semester. (3 credits)

ENGLISH 424Z
Nature and Art in Renaissance Literature
Should the artist represent nature or transform it? Texts from literature and criticism written before 1700. (6 credits)

ENGLISH 425A/B
Art and Ideas in the Early Seventeenth-Century.
A study of the poetry and some prose of the period, with special emphasis on the work of John Donne. (3 credits)

ENGLISH 426Z
Seventeenth-Century Poetry
The course will put major emphasis on the poetry of Milton. Other poets to be studied will be selected from among Jonson, Donne, Herbert, Herrick and Marvell. (6 credits)

ENGLISH 427A/B
Milton
Study of Milton's development as an artist and thinker from his school years through his involvement in the English Civil War to his final achievement in the epic genre. Readings will include the shorter poems, selected prose, *Paradise Lost* and *Samson Agonistes*. (3 credits)

ENGLISH 429A/B
Restoration Drama
A study of plays by Etherege, Wycherley, Congreve, Dryden, Vanbrugh, Farquhar and others, intended to serve as an introduction both to this phase of English drama and to some of the major ideas and preoccupations of Restoration and eighteenth-century literature. (3 credits)

ENGLISH 431A/B
Eighteenth-Century Prose
A study of major eighteenth-century prose writings, especially novels, prose satire and biography. (3 credits)

ENGLISH 432Z
Literature of the Eighteenth Century
A study of the aesthetic principles underlying the eighteenth century view of art. Numerous cross references are made to the painting of the period. Readings will be drawn from Dryden, Pope, Swift, Johnson, Boswell, Reynolds, The Letters of Gainsborough. (6 credits)

ENGLISH 433A
The Restoration and Eighteenth Century
Major authors of the eighteenth century, to include Dryden, Swift and Pope. (3 credits)

ENGLISH 435B
The Restoration and Eighteenth Century
Prerequisite: English 433A or in consultation with the professor. Major authors of the eighteenth century, to include Johnson, Richardson and Fielding. (3 credits)

ENGLISH 436Z
The Romantics
Major authors of the Romantic period, to include Blake, Wordsworth, Coleridge, Byron, Keats and the Shelleys. (6 credits)

ENGLISH 437A
The Romantic Period I
The course will survey the major poets of the Romantic period (Blake, Wordsworth, Coleridge) with historical background and emphasis on the common technical and thematic elements of Romantic poetry. (3 credits)

ENGLISH 439B
The Romantic Period II
Same as English 437A, treating Byron, Shelley and Keats. (3 credits)

ENGLISH 440Z
Victorian Literature
The poetry of Tennyson, Browning, Arnold, Hopkins, the Pre-Raphaelite circle and novels from the following: Dickens, Eliot, Hardy (one novel by each author). (6 credits)

ENGLISH 441A
Victorian Literature I
A study of Victorian prose works concerned with the role of the individual in society, beginning with two major social novels, *Middlemarch* and *Vanity Fair*. (3 credits)

ENGLISH 442A/B
Nineteenth-Century Fiction
Representative fiction from Jane Austen to Hardy. (3 credits)

ENGLISH 443B
Victorian Literature II
Complementary to English 441A, but also suitable as an independent half-course. A study of Victorian poetry and novels concerned with the individual consciousness, beginning with Tennyson and Browning. (3 credits)

ENGLISH 444Z
Literature and Aesthetics of the Nineteenth Century
A study of the various and changing views of the nineteenth century towards the nature and function of art. The course includes the study of the theoretical writings of DeQuincey, Ruskin, Swinburne, Whistler, Pater, Wilde, Bell and Fry, and a practical analysis of the major poetic works of Tennyson and Browning. (6 credits)

ENGLISH 445A
American Literature, Nineteenth-Century
See note in description of English 448Z (3 credits)

ENGLISH 446Z
Twentieth Century British Literature
Authors will be chosen from among: Lawrence, Joyce, Yeats, Woolf, Lessing, Shaw, O'Casey, Forster, Waugh, Auden, Eliot. (6 credits)

ENGLISH 447B
American Literature, Twentieth-Century
See note in description of English 448Z (3 credits)

ENGLISH 448Z
American Literature
A study of archetypal patterns, literary and philosophical concerns of nineteenth and twentieth-century American Literature. Reading material will be chosen from among: Poe, Thoreau, Hawthorne, Melville, James and Twain, in the first semester and from Norris, Anderson, Fitzgerald, Hemingway, Faulkner, West, Steinbeck, Mailer, Kerouac, Salinger and Updike in the second semester. (6 credits)
NOTE: This course is taught some years as two half courses: 445, 447. It is the prerequisite for all advanced American Literature courses.

ENGLISH 449A/B
Advanced Studies in American Literature I
Prerequisite: English 448. The topics considered will vary from year to year, and may include American poetry, American short stories, American drama, nineteenth-century American fiction, etc. (3 credits)

ENGLISH 451A/B
Advanced Studies in American Literature II
Prerequisite: English 448. As in 449, the topic will vary annually. (3 credits)

ENGLISH 450Z
Modernist Poetry and Poetics.
A study of the major poetic figures of the period 1890-1930, with an emphasis on the relationships between poetry and the visual arts. The influence of impressionism, symbolism, surrealism, and cubism on the theories of poetry will be considered. Detailed study of Yeats, Eliot, Crane, Wallace Stevens, E. E. Cummings, the Imagists, etc. (6 credits)

ENGLISH 453A
Modern Fiction I
Shorter works of nineteenth and twentieth-century American and European novelists. Au-

thors read will include Dostoevsky, Tolstoy, Conrad, Faulkner, Camus and Grass. (3 credits). *NOTE: In some years, 453A and 455B are given as a full course, 452Z.*

ENGLISH 455B
Modern Fiction II
Same authors as in 453A, but their longer works will be studied. (3 credits)
NOTE: In some years 453A and 455B are given as a full course, 452Z.

ENGLISH 454Z
An Introduction to Canadian Literature
An historical survey of the main themes in Canadian Literature will be illustrated from the major writers of poetry, fiction and drama. (6 credits)

ENGLISH 456A/B
Advanced Studies in Canadian Literature I
Prerequisite: English 454. Topics from poetry — an intensive study of the background and development of the genre and critical material will be conducted. (3 credits)

ENGLISH 457A/B
Advanced Studies in Canadian Literature II
Prerequisite: English 454. Topics from fiction — an intensive study of the background, development of the genre and critical material will be conducted. (3 credits)

ENGLISH 459Z
Late Victorian and Edwardian Literature
The end of the Victorian era and the beginnings of modernism. Novelists including James, Forster, Gissing, and Woolf; Wilde, Beardsley and *The Yellow Book*. (6 credits)

ENGLISH 461A/B
The Essay
Forms of non-fiction prose. Study of techniques of argumentation, descriptions and narration. The literary essay, *belles-lettres*, the diary, the memoir — from the Elizabethans to the 20th Century. (3 credits)

ENGLISH 500Z
Advanced Research and Thesis
A small number of seminars or tutorials on special themes and topics, to vary each year. Registration limited to Honours students in their final year. All students must consult with the Department in advance. (6 credits)

ENGLISH 501Z
Anglo-Saxon
An introduction to the study of Old English (Anglo-Saxon). (6 credits)

ENGLISH 502Z
History of Criticism
A consideration of the major texts which have marked the development of literary criticism. The course will be both historical and methodological. (6 credits)

ENGLISH 503B
Middle English
A study of selected essential texts of early Middle-English. (3 credits)

ENGLISH 580Z
Independent Studies
A tutorial programme arranged with a member of the department. (6 credits)

ENGLISH 590Z
Joint Tutorial in History and English
A tutorial for students in the English and History Joint Honours Programme. (6 credits)

ENGLISH 592Z
Joint Tutorial in Modern Languages and English
A tutorial for students in the English and Modern Languages Joint Honours Programme. (6 credits)

51.12 Département d'Études Françaises

Assistant Professor and Chairman
M. TIFFOU

Associate Professor and Chef de section (Literature)
L. SUGDEN

Assistant Professor and Chef de section (Language)
L. VAN TOCH

Professors
G. LABBE
G. LAURION
A. LAUZIERE
P. TOUPIN

Associate Professors
M. BIDEAUX
C. ROUBEN

Assistant Professors
M.-J. ANTOLIN
M. CATRY-VERRON
G. CHARPENTIER
D. LEVY
M.-F. LIGIER
O. RIGAULT
N. TRUCHON

51.12.1 PROGRAMMES

60 BA Honours in French Literature

Year I

18 Fr 310Z^6 or 312A^3; (341A^3 and 343B^3) or (345A^3 and 347B^3); (two or three of 359A^3, 361B^3, 363A^3, 365B^3, 367A^3, 369A^3).

Year II

24 Fr 421A^3; 423B^3 or 425B^3; 431A^3; 433B^3 or 435B^3; 428Z^6; 532Z^6 or 534Z^6.*

Year III

18 Fr 532Z^6 or 534Z^6*; (two of 539A^3, 541B^3, 543A^3, 545B^3, 547A^3, 549B^3); 500Z^6.

**Because these two courses are given alternately, Honours students must take one of them in their second year.*
See note on alternation of courses §51.12.2

60 BA Honours in French Language

Year I

18 Fr 636Z^6, 428Z^6, (two of 359A^3, 361B^3, 363A^3, 365B^3, 367A^3, 369A^3)

Year II

18 Fr 452Z^6, 538Z^6, (341A^3 and 343B^3) or (345A^3 and 347B^3).

Year III

24 Fr 552Z^6, 438Z^6, (two of 539A^3, 541B^3, 543A^3, 545B^3, 547A^3, 549B^3), one French elective.

72 BA Joint Honours in French & English*

30 French: One full course in the XXth century; One full course in Quebec literature; Two full courses chosen from the XVIIth, XVIIIth and XIXth century; FR. 310Z^6; or 312A^3 plus a half course in the missing century (XVIIth, XVIIIth, XIXth century.

30 English: Equivalent of one full course chosen among the following: 400, 401, 402, 403, 404, 405 and 407;
Equivalent of three full courses chosen by genre or by periods paralleling the choice in French courses;
Equivalent of one full elective chosen from the list of honours and major courses.

12 The 11th and 12th courses will be chosen as follows: either the equivalent of one full course in each of two departments or a corresponding combination of "Independent Studies" carried out in each of the two departments.

**Sequence of courses to be determined in consultation with the departments concerned.*

51.11 Fine Arts

The Faculty of Fine Arts was formed in May 1974 and will offer programmes on both campuses. The programme-descriptions and information about the course are given in § 81 "Faculty of Fine Arts."

72 BA Joint Honours: in French and Modern Languages*

36 French: One full course in the XXth century; One full course in Quebec literature; Two full courses chosen from the XVIIth, XVIIIth, and XIXth century; FR. 310Z[6]; or 312A[3] plus a half course in the missing century (XVIIth, XVIIIth, XIXth century);
The equivalent of one full elective chosen from the list of French honours and major courses or a full tutorial.

36 Modern Languages: These 6 courses are to be chosen in German, Italian or Spanish in consultation with the Chairman of Modern Languages and Linguistics.
Literature courses will be chosen to parallel as much as possible the choice in French courses.

**Sequence of courses to be determined in consultation with the departments concerned.*

BA French Honours and Major Students Entering in January

Year I — Winter Term
12 Fr 343B[3], 347B[3], 361B[3], 365B[3]

Year I and II — Fall Term and Winter Term
Fr 310Z[6], or 312A[3] plus another half course in Quebec literature . . .

Refer to the programmes of Honours and Major in literature for the remaining courses in the programme.

42 BA Major in French Literature

Year I
18 Fr 310Z[6] or 312A[3]; (341A[3] and 343B[3]) or (345A[3] and 347B[3]); (two or three of 359A[3], 361B[3], 363A[3], 365B[3], 367A[3], 369A[3])

Year II
12 Fr 421A[3]; 423B[3] or 425B[3]; 431A[3]; 433B[3] or 435B[3].

Year III
12 Fr (two of 539A[3], 541B[3], 543A[3], 545B[3], 547A[3], 549B[3]); (571A[3] or 575A[3]) and (573B[3] or 577B[3]).*

**See note on alternation of courses § 51.12.2*

42 BA Major in French Language (1er Degré.)

Year I
12 Fr 303F[6], 305S[6]

Year II
12 Two of Fr 612Z[6], 614Z[6], 616Z[6]

Year III
18 Three of Fr 626Z[6], 628Z[6], 636Z[6], a course selected among the other advanced courses of the Department[6].

A group of seven courses for students starting at the intermediate level.

42 BA Major in French Language (2e Degré.)

Year I
12 Two of Fr 612Z[6], 614Z[6], 616Z[6]

Year II
18 Three of Fr 626Z[6], 628Z[6], 636Z[6], 428Z[6]

Year III
12 Two of Fr 452Z[6], 552Z[6], 438Z[6], 538Z[6], a course selected among the other advanced courses of the Department.[6]

NOTE: The student must choose her/his courses in consultation with the Department.

30 Certificate in French Language (1er Degré.)

Year I
12 Fr 602F[6], 604S[6]

Year II
12 Fr 303F[6], 305S[6]

Year III
6 One of Fr 612Z[6], 614Z[6], 616Z[6]

A group of 5 courses over three years of study for students starting at the elementary level who wish to become functionally bilingual.

30 Certificate in French Language (2e Degré.)

Students who complete 5 advanced courses as indicated under Year II and Year III of the Major in French Language — 1er degré can be given a Certificate in French Language, 2e degré.
The courses can be spread over two or three years of study, in consultation with the Department.

51.12.2 DÉPARTEMENT D'ETUDES FRANÇAISES

Alterations may be made in the programmes, from year to year, but the whole three-year programme of a given student remains the one appearing in the calendar of the year of his registration in French, unless otherwise authorized by the Department.

Students wishing to combine programmes in French and another discipline, should consult with the chairmen of both departments and have their registration approved by both of them.

Generally a higher number for a course does not reflect a greater degree of difficulty in that course.

An honours student in French is normally required to have a mark of 65% in each of his French courses.

Students honouring or majoring in French, or in French and another discipline, will have a faculty adviser with whom they will consult.

Literature:

Honours students will consult with their advisers in particular to prepare, in their second and third years, the final essay required in Fr 500Z.

New candidates in the Honours programme will be required to read two important literary works as supplementary reading in each of their literature courses. They will be examined orally, each year, on this material and marked as for a term paper. This yearly work will complete the requirements for their 10th course, Fr 500Z, which is a tutorial.

Certain courses may alternate on a yearly basis: Moyen âge with Renaissance, French and Québec civilizations and trends of thought, Canadian literatures, half-courses in Quebec literature and in the XVIIth and XVIIIth centuries.

The courses offered by the Section de Littérature are open to students of all other departments with the approval of the French Department.

A student who is neither majoring nor honouring in French and whose knowledge of the French language is inadequate to enable him to write according to proper standards but sufficient to enable him to follow the course and take part in discussions may register for a literature course and receive permission to write his assignments and examination in ENGLISH. His transcript will then bear "In English" after the course number. Should that student later on decide to major or honour in French, such a course will neither count as a French requirement nor as an elective if it has to be retaken.

Language:

The Language Section of the Department of French Studies offers courses at all proficiency levels from complete beginners to the very advanced. All courses are open to all students for elective academic credits, providing they have the necessary language pre-requisites. In order to ensure that students work at their proper level, each student must come to the Department of French Studies for an informal placement interview with a faculty member before registering.

Students who intend to register by mail should make an appointment before they leave for the Summer recess.

Interviews will be conducted through the Spring and Summer months and in the Fall. Contact the Department secretary for appointments.

Students entering in January should consult the Department about the sequence of courses to be followed for Major and Certificate programmes in French language.

51.12.3 COURSE DESCRIPTIONS

SECTION LANGUE

For easier reference, course descriptions are arranged in numerical order. This order does not indicate the course progression. In order of language proficiency, the courses run as follows: Beginners' and elementary: 600, 602, 604. Intermediate: 606, 608; 303, 305, 307, 309, 311, 313, 315, 317.
Advanced: 321; 612, 614, 616, 626, 628, 636; 428, 438, 452; 538, 552.

FRENCH 303F/S
L'Art de vivre au Québec I

An intensive oral course which aims at increasing the students' fluency in French through discussions with French-speaking student peers, under the guidance of a faculty member. The techniques used include small group interaction, contacts with Québec milieu and intensive practice. Students will participate in the guided choice of subjects which will cover areas of common interest and concern. Regular participation is mandatory. Six hours a week for one term, first or second term. (6 credits)

FRENCH 305F/S
L'Art de vivre au Québec II

Same as 303 F/S, but at a higher proficiency level. The two courses may be taken separately or consecutively. (6 credits)

FRENCH 307A/B
(Also given as Heath 391 § 121.5.3
French for Community Health Services

For students interested in or intending to work in community health services. The practice of the usual French language skills will be centered around situations such as the student may encounter in working in a day care centre, health counselling clinic, hospital, etc. In addition to acquiring a common core of basic medical vocabulary and reviewing oral structures appropriate to the situation, each student will be asked to work on an individual project covering his own area of interest. (3 credits)

FRENCH 309A/B
French used in Physical Education and Sports

For students interested in the area of physical fitness. Subjects studied will include the following: Parts and movements of the body — physical conditioning — the role of physical education and sports in society — The Olympic Games — hockey — sports reporting — leadership in sports. The study of each subject will include vocabulary acquisition, the review of appropriate oral structures, guided discussion and individual projects. (3 credits).

FRENCH 311A/B
French for Recreology

For students interested in the creative use of

leisure for themselves and others. Subjects studied will include: Leisure in the modern society — popular leisure pursuits in Québec — leisure and the city — leisure in the open air — the organization of leisure services in Montreal — holiday camps and their activities — roles and training of camp counsellors. Study will include vocabulary acquisition, review of appropriate structures, guided discussion and individual projects. (3 credits)

FRENCH 313A/B
French for Social Sciences

Primarily for students in political science, sociology and allied fields who wish to participate in French in the community and public life of Québec. The themes and vocabulary studied will cover various political, government and labour organizations and basic legal terminology, with emphasis on actual situations of communication. Readings, guided discussion and individual projects related to the students' particular fields of interest. (3 credits)

FRENCH 315A/B
French for Industry

Primarily for science and engineering students who will use French as the language of communication on the job. The common vocabulary core will cover the organization of an industrial plant and the basic terms relating to the manufacturing process and labour relations. In addition, each student will undertake an individual project covering his own area of interest. (3 credits)

FRENCH 317A/B
French for Library Science

The course will emphasize the vocabulary and structures needed for communicating with users of library and resource centre services, and for exchanging information with the personnel of French libraries, resource centres and similar agencies. Terms related to the organization of a library, the processes, materials and equipment used and the services provided will be studied, In addition, each student will work on an individual project. (3 credits)

FRENCH 321A/B
L'Art de parler en public

On étudiera d'abord le vocabulaire et les techniques nécessaires pour convoquer, diriger et participer à une réunion. On étudiera ensuite la rédaction de divers types de rapports, allocutions et conférences ainsi que les techniques de présentation. Travaux pratiques et analyse critique des travaux. (3 crédits)

FRENCH 428Z
Histoire de la langue et linguistique

Introduction à la linguistique; linguistique descriptive et linguistique historique. Application au français; description du français moderne et histoire de la langue française. Cours obligatoire pour les étudiants *Honours* et fortement recommandé aux *Majors*. Leçons et séances de travaux pratiques. Textes: A. Martinet, *Éléments de linguistique générale;* A. Dauzat, *Tableau de la langue française*. (6 crédits).

FRENCH 438Z
Méthodologie du français langue seconde

Initiation aux principes et méthodes de la linguistique appliquée et de la phonétique corrective. Etude et évaluation de plusieurs méthodes d'enseignement du français langue seconde pour enfants, adolescents et adultes. Etude et préparation de tests et examens. Travaux pratiques. (6 crédits)

FRENCH 452Z
Stylistique et traduction

Stylistique interne du français: examen pratique de procédés grammaticaux, de problèmes de stylistique et de difficultés particulières à la langue française. Introduction à la stylistique comparée de l'anglais et du français: exercices de stylistique comparée, traduction; anglicismes, faux amis; expressions idiomatiques. (6 crédits)

FRENCH 538Z
Pédagogie de l'audio-visuel

Les étudiants se familiariseront avec les appareils audio-visuels employés dans l'enseignement. Ils étudieront, en particulier, l'usage du magnétophone et du laboratoire de langue et apprendront la technique de la préparation des leçons et exercices adaptés aux divers grands moyens de communications (bandes sonores, films, télévision). Travaux pratiques. (6 crédits)

FRENCH 552Z
Traduction avancée

L'art de la traduction. Stylistique comparée du français et de l'anglais. Traduction de textes littéraires de l'anglais au français. (6 crédits)

FRENCH 600Z
Basic French

An introduction to French using an audio-visual method. A lecture and laboratory course restricted to students with no previous knowledge of French. Lectures: 3 hours per week plus language lab for two terms. (6 credits)

FRENCH 602Z
Elementary French

French taught by an audio-visual method. (Premier degré). A lecture and laboratory course. Lectures: 3 hours per week plus language lab for two terms. (6 credits)

FRENCH 602F
Elementary French

Same as French 602Z, but six hours a week during first semester. (6 credits)

FRENCH 604Z
Elementary Oral French

A lecture and laboratory course using an audio-visual method. Lectures: 3 hours per week plus language lab. (6 credits)

FRENCH 604S
Elementary Oral French

Same as 604Z, but 6 hours a week during second semester. (6 credits)

FRENCH 606Z
Intermediate Oral French I

A conversational approach to everyday modern French through active student participation. A review of grammar and syntax through oral exercises. Three hours a week plus language lab for two terms. (6 credits)

FRENCH 608Z
Intermediate French II

A follow up of French 606Z. Lectures: 3 hours per week for two terms. (6 credits)

FRENCH 612Z
Advanced Oral French

A follow-up of French 608Z. The same type of training as 608, but at a higher level. A well motivated student should be able to speak French fluently at the end of this course. (6 credits)

FRENCH 614Z
Problèmes fondamentaux de l'écrit pratique

Advanced language course with emphasis on practical written French. (6 credits)

FRENCH 616Z
Le français dans le commerce

The same level and study programme as 614Z except that particular reference will be made to the commercial world. Texts selected from material used in Commerce courses. (6 credits)

FRENCH 626Z
Advanced Language and Civilization

A practical review of the major difficulties of the French language. Readings in French and Québec civilizations. Advanced translation. (6 credits)

FRENCH 628Z
Advanced Business French

The same level and study programme as 626Z

except that the texts for reading and translation are selected from the world of commerce. (6 credits)

FRENCH 636Z
Advanced Language and Translation

A continuation of French 626/628. This course is designed for students who have already reached a fairly high level of competence in French. The programme aims at consolidating their ability in oral and written French. There will be particular emphasis on translation and composition on a wide range of subjects taken from everyday life as well as from literature and the social sciences. (6 credits)

SECTION LITTÉRATURE

Les étudiants qui ne sont pas inscrits en *Major* ou en *Honours French* peuvent suivre l'un ou l'autre des cours suivants avec la permission du Département.

FRENCH 310Z
Introduction aux études littéraires

Prérequis: un à deux cours de français d'un bon niveau au CEGEP. Méthodologie. Technique de la composition, de l'explication de texte et de la dissertation. Grammaire structurale. Initiation aux principaux genres littéraires. Ce cours est éliminatoire. (6 crédits)

FRENCH 312A
Introduction aux études littéraires supérieures

Prérequis: trois cours de français d'un bon niveau au CEGEP. Technique de l'explication de texte et de la dissertation. Méthodologie de la recherche. Révision des principales difficultés grammaticales. Initiation aux grands genres littéraires. Ce cours est éliminatoire. (3 crédits)

FRENCH 341A
Littérature du XIXe siècle (1800-1850) I

La génération romantique: l'inquiétude, le rêve et l'énergie. Leçons, séances de travaux pratiques et travaux de recherche. Le roman: Chateaubriand, *René;* Constant, *Adolphe;* Vigny, *Cinq-Mars;* Balzac, *Le Père Goriot;* Stendhal, *Le rouge et le noir;* Lagarde et Michard, *XIXe siècle.* (3 crédits)

FRENCH 343B
Littérature du XIXe siècle (1800-1850) II

La génération romantique: l'évasion, le risque et la recherche. Leçons, séances de travaux pratiques et travaux de recherche. La poésie: Lamartine, *Les méditations;* Vigny, *les destinées;* Hugo, *Les contemplations.* Le théâtre: Hugo, *Ruy Blas,* Musset, *Lorenzaccio;* Vigny, *Chatterton;* Lagarde et Michard, *XIXe siècle.* (sp. Musset, Nerval et Gautier). (3 crédits)

FRENCH 345A
Littérature du XIXe siècle (1850-1900) III

Le monde bourgeois et anti-bourgeois: les courants réaliste, naturaliste et fin de siècle. Leçons, séances de travaux pratiques et travaux de recherche. Le roman: Flaubert, *Madame Bovary;* Fromentin, Dominique; D'Aurevilly, *L'ensorcelée;* Zola, *Germinal;* Huysmans, *A Rebours;* Lagarde et Michard, *XIXe siècle.* (3 crédits)

FRENCH 347B
Littérature du XIXe siècle 1850-1900) IV

Le monde bourgeois et anti-bourgeois: les courants parnassien et symboliste. Leçons, séances de travaux pratiques et travaux de recherche. La poésie: Baudelaire, *Les fleurs du mal;* Verlaine, *Romances sans paroles;* Rimbaud, *Une saison en enfer;* Mallarmé, *Hérodiade et L'après-midi d'un faune;* Lagarde et Michard, *XIXe siècle.* (3 crédits).

FRENCH 359A
Littérature québécoise: Le roman I

Monde rural et monde urbain. Origines, influences, évolution. Étude d'oeuvres modernes. Leçons, séances de travaux pratiques et travaux de recherche. Textes: Ringuet, *Trente arpents;* Guèvremont, *Le survenant;* Savard, *Menaud maître-draveur;* Lemelin, *Au pied de la pente douce;* Roy, *Bonheur d'occasion.* (3 crédits)

FRENCH 361B
Littérature québécoise: Le roman II

Le monde de l'individu. Leçons, séances de travaux pratiques et travaux de recherche. Textes: Langevin, *Poussière sur la ville;* Thériault, *Agaguk;* Bessette, *Le libraire;* Ducharme, *L'avalée des avalés;* Aquin, *Prochain épisode;* Blais, *Une saison dans la vie d'Emmanuel;* Ferron, *L'amélanchier.* (3 crédits)

FRENCH 363A
Poésie canadienne-française (1615-1940)

La poésie canadienne d'expression française de Marc Lescarbot à Saint-Denys Garneau et F. A. Savard. Origines, influences. Élaboration d'une thématique d'ici. Évolution formelle et stylistique. — Classicisme. L'homme, l'histoire et la patrie: École de Québec: romantisme canadien. L'homme et son moi: École littéraire de Montréal: Parnasse et symbolisme. L'homme, la terre et le passé: poésie régionaliste. L'homme et le monde: le groupe artiste. Individualisme. Unanimisme. — Leçons, travaux pratiques, exposés, recherche et/ou création. Textes: Lescarbot, Fréchette, Morin, Choquette (Collection Classiques canadiens); Alfred Garneau; Nelligan, *Poèmes choisis;* J.-A. Loranger, *Les atmosphères; Poèmes;* Des Rochers, *À l'ombre de l'Orford;* Dugas, *Salve Alma Parens;* F.-A. Savard, *L'abatis;* G. Sylvestre, *Anthologie de la poésie canadienne-française;* P. de Grandpré, *Histoire de la littérature française du Québec.* (tome II). (3 crédits)

FRENCH 365B
Littérature québécoise: Poésie contemporaine

Notre poésie de Saint-Denys Garneau à nos jours. Influences. Évolution thématique, formelle et esthétique. Surréalisme. — Héritage symboliste. Interrogation poétique: l'homme et son destin: poètes de l'inquiétude et de la condition humaine. Poésie de l'impuissance, de l'échec et du refus. Poètes de l'appartenance et du pays réinventé. Les ''techniciens''. Leçons, travaux pratiques, exposés, recherche et/ou création. — Textes: Saint-Denys Garneau, A. Grandbois; (collection Classiques canadiens); G. Lapointe, *Ode au Saint-Laurent;* G. Miron, *L'homme rapaillé;* F. Ouellette, Poésies (1953-1971); Alain Bosquet, *Poésie du Québec;* P. de Grandpré, *Histoire de la littérature française du Québec* (tome III). (3 credits)

FRENCH 367A
Littérature québécoise: le conte littéraire

Origines. Influences. Variété. Évolution thématique et stylistique. — Leçons, travaux pratiques. Fréchette, Lemay, P. A. de Gaspé, Dantin, R. de Roquebrune, J. A. Loranger, Hertel, Marchand, Lemelin, Leclerc, Giroux, Thériault . . . Textes: Ringuet, *Héritage;* A. Grandbois, *Avant le chaos;* A. Hébert, *Le torrent;* Claire Martin, *Avec ou sans amour:* G. Roy, *La route d'Altamont;* J. Ferron, *Contes.* (3 crédits)

FRENCH 369A
Littérature québécoise: le théâtre

Origines. Influences. Variété. Structure. Vues thématiques en relation avec le contexte socio-culturel du Québec. Continuité. L'accent portera sur les oeuvres théâtrales de 1945 à nos jours. — Leçons, travaux pratiques. Textes: Toupin, *Brutus;* Dubé, *Un simple soldat* ou *Zone;* Langui-

rand, *Les grands départs;* A. Hébert, *Le temps sauvage;* Eloi de Grandmont, *Un fils à tuer* ou F. Loranger, *Une maison . . . un jour;* A. Laurendeau, *La vertu des chattes;* M. Tremblay, *A toi pour toujours, ta Marie-Lou.* (3 crédits)

FRENCH 421A
Littérature du XVIIe siècle: le théâtre et la dramaturgie classiques

Étude du théâtre classique dans le théâtre de Corneille, de Racine et de Molière. Leçons, séances de travaux pratiques et travaux de recherche. Textes: *Polyeucte; Britannicus; Tartuffe;* Lagarde et Michard, *XVIIe siècle.* (3 crédits)

FRENCH 423B
Littérature du XVIIe siècle: les moralistes, les penseurs et les orateurs

Leçons, séances de travaux pratiques et travaux de recherche. Textes: Descartes, *Discours de la Méthode;* Pascal, *Pensées;* La Rochefoucauld, *Maximes;* Bossuet, *Oraisons funèbres* et *Sermons;* La Bruyère, *Caractères;* Lagarde et Michard, *XVIIe siècle.* (3 crédits)

FRENCH 425B
Littérature du XVIIe siècle: la fable, le roman, la littérature épistolaire, les mémoires

Leçons, séances de travaux pratiques et travaux de recherche. Textes: La Fontaine, *Fables;* Mme de La Fayette, *La Princesse de Clèves;* Mme de Sévigné, *Lettres;* Retz, *Mémoires;* Saint-Simon, *Mémoires;* Lagarde et Michard, *XVIIe siècle.* (3 crédits)

FRENCH 428Z
Histoire de la langue et linguistique

Introduction à la linguistique; linguistique descriptive et linguistique historique. Application au français; description du français moderne et histoire de la langue française. Cours obligatoire pour les étudiants *Honours* et fortement recommandé aux *Majors.* Leçons et séances de travaux pratiques. Textes: A. Martinet, *Éléments de linguistique générale;* A. Dauzat, *Tableau de la langue française.* (6 crédits)

FRENCH 431A
Littérature du XVIIIe siècle: l'esprit philosophique en France au siècle des lumières

Montesquieu, *Lettres persanes;* Voltaire, *Lettres philosophiques; L'encyclopédie;* Rousseau, *Contrat social;* Lagarde et Michard, *XVIIIe siècle.* (3 crédits)

FRENCH 433B
Littérature du XVIIIe siècle: le roman et le conte

Prévost, *Manon Lescaut;* Lesage, *Gil Blas;* Diderot, *Le neveu de Rameau;* Voltaire, *Candide;* Rousseau, *La Nouvelle Héloïse;* Bernardin de Saint-Pierre, *Paul et Virginie,* Lagarde et Michard, *XVIIIe siècle.* (3 crédits)

FRENCH 435B
Littérature du XVIIIe siècle: le théâtre et la poésie

Lesage, *Turcaret;* Marivaux, *Le jeu de l'amour et du hasard, Les fausses confidences;* Sedaine, *Le philosophe sans le savoir;* Beaumarchais, *Le mariage de Figaro;* Chénier, *Poésies;* Lagarde et Michard, *XVIIIe siècle.* (3 credits)

FRENCH 438Z
Méthodologie du Français Langue Seconde

Initiation aux principes et méthodes de la linguistique appliquée et de la phonétique corrective. Etude et évaluation de plusieurs méthodes d'enseignement du français langue seconde pour enfants, adolescents et adultes. Etude et préparation de tests et examens. Travaux pratiques. (6 credits)

FRENCH 452Z
Stylistique et Traduction

Stylistique interne du français: examen pratique de procédés grammaticaux, de problèmes de stylistique et de difficultés particulières à la langue française. Introduction à la stylistique comparée de l'anglais et du français: exercices de stylistique comparée, traduction; anglicismes, faux amis; expressions idiomatiques. (6 credits)

FRENCH 500Z
Etude d'un auteur (tutorat)

Ce cours est destiné aux étudiants *Honours* de 3e année. Le travail de recherche se fera, dans chaque cas individuel, sous la direction d'un professeur déterminé en fonction de l'auteur étudié. Le candidat étudiera les oeuvres d'un auteur de son choix. Il dressera personnellement la liste des ouvrages de cet auteur ainsi qu'une bibliographie. En dernier lieu, il rédigera un travail sur la matière étudiée. En outre, pour parfaire le programme de ce tutorat, les étudiants *Honours* seront tenus de faire des lectures complémentaires, chaque année, à raison de deux oeuvres par cours de littérature. Le professeur de chaque cours de littérature fera subir au candidat une épreuve orale sur cette matière et la jugera à l'égal d'une dissertation. (6 crédits)

FRENCH 501A
Quebec literature (taught in English) I

A course designed for English speaking students who wish to gain insight into the thought processes, attitudes and way of life of Québec as revealed by some of the most striking works of prose and poetry in her literature. A choice of the following selections which have become classics in this field: Ringuet, *Thirty Acres;* R. Lemelin, *The Town Below;* G. Roy, *The Tin Flute;* G. Bessette, *Not for Every Eye:* Y. Thériault, *Agaguk;* G. Tougas, *History of French Canadian Literature.* (3 credits)

FRENCH 503B
Québec literature (taught in English) II

Chronologically, a continuation of 501A, concerned more particularly with literary creations which are more recent. A choice from the following list depending upon availability of texts and interests of the group: M. C. Blais, *Mad Shadows;* C. Jasmin, *Ethel and the Terrorist;* R. Ducharme, *The Swallower Swallowed;* G. Gélinas, *Yesterday the Children Were Dancing;* R. Carrier, *La Guerre, Yes Sir!* G. Tougas, *History of French Canadian Literature.* (3 credits)

FRENCH 532Z
Littérature du moyen âge

Initiation à la langue et à la littérature du moyen âge. Choix d'oeuvres épiques, romanesques, lyriques et historiques. Textes: *La chanson de Roland; Tristan et Iseut;* Chrétien de Troyes; *Yvain; La chastelaine de Vergi;* Guillaume de Lorris, *Le roman de la rose;* Villehardouin, *La conqueste de Constantinople;* Villon, *Poésies;* Lagarde et Michard, *Le moyen âge.* Leçons et séances de travaux pratiques. (6 credits)

FRENCH 534Z
Littérature du XVIe siècle: la Renaissance et l'humanisme en France

Prose et Poésie. Origines, évolution et oeuvres maîtresses. Textes: Rabelais, *Gargantua;* Du Bellay, *Défense et illustration de la langue française, Regrets;* Ronsard, *Les amours;* Montaigne, *Essais;* d'Aubigné, *Les tragiques;* Lagarde et Michard, *XVIe siècle.* (6 credits)

FRENCH 538Z
Pédagogie de l'audio-visuel

Les étudiants se familiariseront avec les appareils audio-visuels employés dans l'enseignement. Ils étudieront, en particulier, l'usage du magnétophone et du laboratoire de langue et apprendront la technique de la préparation des leçons et exercices adaptés aux divers grands moyens de communications (bandes sonores, films, télévision). Travaux pratiques. (6 crédits)

FRENCH 539A — FRENCH 541B
Littérature du XXe siècle: la poésie

Néo-symbolisme et néo-romantisme. Courants nouveaux. Foisonnement des écoles. Re-

nouvellement poétique: le surréalisme, évolution. Textes: Claudel, *Cinq grandes odes;* Apollinaire, *Alcools;* Breton, *Clair de terre;* Eluard, *Capitale de la douleur;* Char, *Le poème pulvérisé;* Michaux, *Plume;* Ponge, *Le parti-pris des choses;* Breton, *Les manifestes du surréalisme.* (3 crédits)

FRENCH 543A
Littérature du XXe siècle: le roman I

Notions. Espèces. Evolution. Structure. Thèmes. Idéologies. Valeurs traditionnelles et problèmes de la conscience contemporaine. Préoccupations spirituelles. — Leçons et travaux pratiques. — Textes: Alain-Fournier, *Le Grand Meaulnes;* Gide, *La porte étroite;* Mauriac, *Thérèse Desqueyroux;* le roman-fleuve; Lagarde et Michard, *XXe siècle.* (3 crédits)

FRENCH 545B
Littérature du XXe siècle: le roman II

Evolution du genre romanesque. Structures et techniques. Thèmes. Courants de pensée, de sensibilité et d'esthétique. Problèmes de l'homme moderne. Valeurs nouvelles. La grandeur humaine. De la révolte au néant: l'absurde. Le nouveau ou l'anti-roman: déshumanisation et technicité. — Leçons et travaux pratiques. — Textes: Proust, *Du côté de chez Swann;* Bernanos, *Journal d'un curé de campagne;* Malraux, *La condition humaine;* Camus, *L'étranger;* Sartre, *La nausée;* P. H. Simon, *Témoins de l'homme.* (3 crédits)

FRENCH 547A
Littérature du XXe siècle: le théâtre I

Evolution. Structure. Langue théâtrale. Leçons, travaux pratiques, recherches. Textes: Jarry, *Ubu;* Claudel, *L'annonce faite à Marie;* Giraudoux, *La guerre de Troie n'aura pas lieu;* Anouilh, *Becket ou l'honneur de Dieu; La sauvage;* Montherlant, *La reine morte.* (3 crédits)

FRENCH 549B
Littérature du XXe siècle: le théâtre II

Evolution. Structure. Langue théâtrale. Etude de la condition humaine, son illustration. Défense de l'homme dans le théâtre du XXe siècle. Leçons, travaux pratiques et recherches. — Textes: Sarte, *Huis clos, Les mouches;* Camus, *Caligula, Le malentendu;* Schéhadé, *Monsieur Bob'le;* Beckett, *En attendant Godot, Fin de partie;* Ionesco, *La cantatrice chauve, Rhinocéros;* Genêt, *Haute surveillance, Le balcon.* (3 crédits)

FRENCH 551Y
Création littéraire et théâtrale

Ce cours, ou atelier d'écriture, s'adresse aux étudiants désireux d'écrire et de soumettre leurs textes à la critique et à l'analyse. Chaque semaine, un auteur lira ou fera lire son texte, se prêtant aux questions et aux commentaires de ses confrères et du professeur. Aperçus sur les problèmes d'écriture dans les différents genres (poésie, conte, roman, essai, théâtre ou écriture pour la scène, la radio, la télévision, le cinéma), sur les lois ou les contraintes inhérentes à un genre choisi et sur les récentes recherches formelles dans ce domaine. Exercices d'écriture axés sur ces contraintes et ces recherches. (3 crédits)

FRENCH 552Z
Traduction avancée

L'art de la traduction. Stylistique comparée du français et de l'anglais. Traduction de textes littéraires de l'anglais au français. (6 crédits).

FRENCH 553B
(Also given as Drama 553B § 81.10.3)
Art dramatique

L'inscription est limitée. Ce cours, ou atelier pratique de théâtre, s'adresse aux étudiants qui veulent acquérir une connaissance pratique du théâtre, s'initier au phénomène de socialisation que cet art réalise. Ce ''théâtre en action'' vise à sensibiliser aux exigences du texte dramatique et aux réalités de la scène. Au cours de l'année, les membres de ce cours monteront et interpréteront une pièce ou quelques actes du théâtre français et/ou québécois, ou des scènes créées dans le cours. Étude pratique de quelques oeuvres susceptibles d'être représentées. Notions d'histoire du théâtre, de mise en scène, de formation du comédien, d'expression corporelle, de jeu scénique. Exercices de scénarisation de situations dramatiques, d'improvision dramatique et de diction théâtrale. (3 crédits)

FRENCH 571A
La civilisation française: ses rapports avec le Québec

Introduction à la civilisation française du moyen âge à nos jours. Le monde français: ses principales caractéristiques, unité et diversité. Aperçus sur l'histoire et la vie politique, économique, sociale et culturelle (religion, enseignement, beaux-arts, littérature . . .) de la France. — Présence de la France dans le monde, en particulier au Québec. Ce cours se propose surtout d'aider l'étudiant à situer la littérature française dans le contexte historique, politique, social et culturel qu'elle reflète. Leçons, travaux pratiques, recherches. — Textes: Guy Michaud, *Guide France;* Yves Trotignon, *La France au XXe siècle.* (3 crédits)

FRENCH 573B
Essai et civilisation du Québec

La culture et la civilisation du Québec d'hier et d'aujourd'hui vues par ses principaux essayistes. Le monde québécois: origines, institutions, système de valeurs, évolution. Aspects marquants de l'histoire et de la vie politique, économique, sociale et culturelle (religion, enseignement, beaux-arts, littérature, langue, éloquence, journalisme . . .) du Québec. Leçons, travaux pratiques et travaux de recherche. Textes: Edmond de Nevers, *L'avenir du peuple canadien-francais;* Jean Le Moyne, *Convergences;* Lionel Groulx, *Les chemins de l'avenir;* Pierre Vadeboncoeur, *La ligne du risque;* Raoul Blanchard, *Le Canada français . . .* (3 crédits)

FRENCH 575A
Histoire des idées en France au XXe siècle

Etude des principaux courants de pensée dans la France contemporaine: nationalisme, socialisme, intuitionisme, surréalisme, existentialisme, structuralisme. L'étude se fera à l'aide de textes d'essayistes et de penseurs, entre autres, Bergson, Barrès, Péguy, Breton, Camus, Sartre, Lévi-Strauss. Leçons, travaux pratiques. Textes recommandés: Bergson, *Les deux sources de la morale et de la religion;* A. Robinet, *Bergson;* Valéry, *Regards sur le monde actuel;* Breton, *Manifestes du surréalisme;* Sartre, *L'existentialisme est-il un humanisme? Questions de méthode;* Teilhard de Chardin, *Le phénomène humain;* Malraux, *La tentation de l'Occident;* Camus, *L'homme révolté;* Lévi-Strauss, *Anthropologie structurale;* Gaétan Picon, *Panorama des idées contemporaines.* (3 crédits)

FRENCH 577B
Histoire et mouvement des idées au Québec

Étude des principaux courants de pensée dans le Québec d'hier et d'aujourd'hui tels que l'ultramontanisme, le libéralisme, le nationalisme, le socialisme. Ce cours aidera l'étudiant à mieux situer la littérature française du Québec dans le contexte idéologique, politique, social et culturel qu'elle reflète. On étudiera, entre autres, les essayistes suivants: Edmond de Nevers, Jean Le Moyne, L. Groulx, P. Vadeboncoeur, F. Dumont, P. Vallières . . . Leçons, travaux pratiques. Textes suggérés: Edmond de Nevers, *L'avenir du peuple canadien-français;* Collection Classiques canadiens (Parent, Tardivel, F.-X. Garneau, Buies, Fournier . . .); Jean Le Moyne, *Convergences;* Lionel Groulx, *Les chemins de l'avenir;* F. Dumont, *Le lieu de l'homme;* Ernest Gagnon, *L'homme d'ici;* Pierre Vadeboncoeur, *La ligne du risque, Indépendances;* J.-P. Desbiens, *Les insolences du Frère Untel;* P. Vallières, *Nègres blancs d'Amérique;* F. Dumont, J.-P.

Montigny, *Idéologies au Canada Français.* (1850-1900). (3 crédits).

FRENCH 596Z
(Also given as Inte 324Z § 51.16.12)
Littérature comparée — Comparative literature. Littératures canadiennes — Canadian literatures

L'étude comparée des littératures canadiennes d'expression française et d'expression anglaise. Existe-t-il une seule littérature canadienne dans les deux langues, ou, en réalité, y a-t-il deux littératures séparées au Canada? Comparative study of French and English Canadian Literature. Is there only one literature in two languages or has Canada produced two distinct and separate literatures? Textes — Texts: Grove, *Settlers of the Marsh;* Ringuet, *Trente arpents;* MacLennan, *The Watch that Ends the Night;* Langevin, *Poussière sur la ville;* Laurence, *Rachel, Rachel;* Davies, *Fifth business;* Carrier, *La guerre, Yes Sir!;* Cohen, *Beautiful Losers;* Bessette, *Incubation;* Hébert, *Kamouraska.* (6 crédits).

FRENCH 598Z
Programme libre ("Independent studies programme")

L'inscription à ce cours se fait après consultation avec le ou les professeurs devant surveiller la bonne marche des travaux et avec l'approbation du Département. (6 crédits).

FRENCH 638Z (evening division)
Français avancé. Initiation à l'art littéraire

Étude des thèmes de la littérature du XXe siècle à travers des oeuvres et des textes choisis parmi les principaux genres. Travaux pratiques d'analyse, de rédaction et de grammaire. Ce cours est normalement destiné à ceux qui font leurs études secondaires en français. (6 crédits).

FRENCH 642Z (evening division)
Initiation à la littérature

Connaissance des principaux genres littéraires et apprentissage des principales techniques de l'explication de texte. Étude approfondie de quelques oeuvres québécoises et française contemporaines. (6 crédits).

51.13 Department of Geology

GEOLOGY
Associate Professor and Chairman
E. H. CHOWN
Professor
D. J. McDOUGALL
Associate Professor
K. K. MUKHERJI
Assistant Professor
J. T. JENKINS
G. P. SASSANO

Geography
Co-ordinator
M. BROOKFIELD

51.13.1 PROGRAMMES

108	BSc Honours in Geology
	Year I
18	Geol 311Y[3], 313A[3], 315B[3], 321A[3], 331B[3], 333B[3]
6	Chem 342A[3], 344B[3]
6	Cognate Sc Elec
6	Elec
	Year II
21	Geol 401B[3], 412Z[6], 431B[3], 441A[3], 443A[3], 445B[3]
3	Geol Elec
6	Chem 336Z[6]
6	Elec
	Year III
24	Geol 502Z[6], 512Z[6], 521A[3], 523A[3], 552Z[6]
6	Geol Elec
6	Elec

90	BSc Specialization in Geology
	Year I
18	Geol 311Y[3], 313A[3], 315B[3], 321A[3], 331B[3], 333B[3]
6	Chem 342A[3], 344B[3]
6	Elec.
	Year II
15	Geol 401B[3], 412Z[6], 443A[3], 445B[3]
3	Geol Elec.
12	Elec.
	Year III
12	Geol 512Z[6], 521A[3], 523B[3]
6	Geol Elec.
12	Elec.

90	BSc Major in Geology
	Year I
9	Geol 311Y[3], 313A[3], 321B[3]
3	Geol Elec.
18	Elec.
	Year II
12	Geol 412Z[6], 443A[3], 445B[3]
18	Elec.
	Year III
3	Geol 521A[3]
9	Geol Elec.
18	Elec.

51.13.2 DEPARTMENT OF GEOLOGY

Students planning to continue in Geology will normally have taken Geology 301, or equivalent, as part of their Collegial Studies. Students lacking this course may wish to take it as an Elective with their University Programme.

Joint Major programmes are offered in conjunction with all Science Departments.

Field Trips and Field Schools

Lectures and laboratory work cannot successfully substitute for actual observation of geology in the field. Therefore, for all students, half or full day field trips to areas of geological interest are a normal adjunct to several courses. For students in the Honours and Specialized Programmes, geological and geophysical field schools are conducted by staff members in the two weeks following the completion of examinations in the spring. Students following the Major programme are not required to take these field schools, but if suitably qualified, may be granted permission to do so by the department.

Summer Employment

It is strongly recommended that prior to graduation at least one summer be spent in some phase of geological work. Although the Department of Geology cannot guarantee summer employment, its students can normally expect to be engaged in suitable work during the summer months with government agencies or private companies.

51.13.3 COURSE DESCRIPTIONS

GEOLOGY 301A
Physical Geology

Prerequisite: None. The nature, origin and evolution of the universe, stars and of planetary systems: the physical properties of the Earth and its environment; the materials and structures of the Earth's interior and surface, and the processes affecting these regions, such as continental drift, the formation of oceanic basins and mountain build-

ing. Lectures: 3 hours per week. Text: *Geology To-day, CRM Books.* (3 credits).
NOTE: Geology 301A is primarily designed to provide an introduction to Geology for students who are not majoring in the department.

GEOLOGY 302Y
Introductory Laboratory Course in Geology

Prerequisite: None. Laboratory studies include investigation of rock and mineral specimens. Interpretation of topographic maps and aerial photographs; interpretation of Geomorphic and Geologic Maps — and the examination of selected fossils. Field trip to local areas. Lab: 3 hours per week. Text: To be announced. (3 credits)
NOTE: Geology 302Y is primarily designed to provide an introduction to Geology for students who are not majoring in the department.

GEOLOGY 303B
Elementary History of the Earth

Prerequisite: None. The hydrologic cycle and the cycle of erosion; the measurement of geologic time; the history of life on earth and the geologic evolution of North America; glaciation and the ice age; the nature and origin of mineral deposits; the geology of coal, oil and gas; the conservation of natural resources. Lectures: 3 hours per week. Text: *Geology To-day, CRM Books.* (3 credits).
NOTE: Geology 303B is primarily designed to provide an introduction to Geology for students who are not majoring in the department.

GEOLOGY 311Y
Mineralogy

Physical and chemical properties of minerals, elements of crystal chemistry, mineral classification, silicate structure and a description of important silicate mineral groups are topics covered in lectures. In the lab, the composition, diagnostic properties and geological environments of some 150 minerals (non-silicates and silicates) are emphasized and physical and simple chemical tests are applied to the identification of these minerals. Lectures: 1½ hours per week. Lab: 1½ hours per week. Text: Hurlbut, *Dana's Manual of Mineralogy,* 18th Ed. (Wiley). (3 credits)

GEOLOGY 313A
Morphological Crystallography

Prerequisite: None. Point and translational symmetry, the spacelattice, Miller Indices, Bravais Lattices, Hermann-Mauguin notation, and description of the morphology of the forms of some of the mineralogically important point groups are lecture topics. The use of the powder diffractometer in identifying minerals is briefly examined and the identification of crystal forms and their representation in stereographic projection is stressed in labs. Lectures: 3 hours per week. Lab: 3 hours per week. Text: *Dana's Manual of Mineralogy,* 18th Ed. (Wiley). (3 credits)

GEOLOGY 315B
Optical Crystallography

Prerequisite: Geology 313. Lectures deal with the theoretical background necessary for the use of the petrographic microscope. In the laboratory, oil immersion techniques for the determination of isotropic and anisotropic minerals in powder form are studied. If time permits, an introduction to the use of the four axis Universal Stage is given. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Wahlstrom, *Optical Crystallography,* 3rd Ed., (Wiley); U.S.G.S. Bull 848, *The Microscopic Determination of the Nonopaque Minerals,* 2nd Ed. (3 credits)

GEOLOGY 321A
Invertebrate Paleontology

Prerequisite: Geology 301. A systematic survey of major invertebrate fossil groups with chief emphasis on morphology, classification, and geologic occurrence. Study of principles of evolutionary concepts and biostratigraphic zonation. Some selected discussion on paleoecology. Lectures: 3 hours per week. Lab: 3 hours per week. Text: To be announced. (3 credits)

GEOLOGY 331B
Applied Geophysics

Prerequisite: Geology 301. An introduction to geophysical methods of prospecting and of investigating subsurface structures. The theories, uses and limitations of various magnetic, electrical gravitational and seismic methods are explained and compared. The practical operation of the instruments is reviewed and actual field results are analyzed. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Dobrin, *Introduction to Geophysical Prospecting.* (McGraw-Hill). (3 credits)

GEOLOGY 333B
Field Geophysics

Prerequisite: Geology 331. Field work involving small scale seismic, magnetic, gravimetric and electrical surveys. Students will be required to pay for room and board for a ten-day period. Field Work: 2 weeks in May at the Loyola Geophysics Field School. (3 credits)

GEOLOGY 401B
Field Geology

Prerequisite: Geology 442, 412. Surface and underground field mapping methods. Preparation of geological maps, sections and reports from field notes, diagrams and air photos. Special field trips to examine specific geologic problems. Students will be required to pay for room and board for a ten-day period. Field Work: 2 weeks in May at the Loyola Geology Field School. (3 credits)

GEOLOGY 411
Introduction to X-ray Crystallography

Prerequisite: Geology 313. The nature of X-rays, diffraction, the reciprocal lattice, powder diffractometer, powder cameras, single crystal methods. Laboratory work will stress the techniques of powder diffractometry and Precession photography. Lectures: 2 hours per week. Lab: 4 hours per week. References: Bloss: *Crystallography and Crystal Chemistry,* (Holt, Rinehart, Winston) 1971. Sands: *Introduction to Crystallography* (Benjamin Inc.), 1969. Azaroff: *Elements of X-ray Crystallography,* (McGraw-Hill), 1968. (3 credits)

GEOLOGY 412Z
Elementary Petrology

Prerequisite: Geology 301 and 311. The identification and description of hand specimens of sedimentary, igneous and metamorphic rocks. Methods of classifying rocks. Lectures: 3 hours per week. Lab: 3 hours per week. (6 credits)

GEOLOGY 413B
Sedimentary Petrology

Prerequisite: Geology 412 and 315 (may be taken concurrently.) The occurrence and formation of sedimentary rocks. Laboratory includes a brief survey of techniques applied to unconsolidated sediments, but particular emphasis is placed on the microscopic examination of sedimentary rocks. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Blatt, Middleton, Murray, *Origin of Sedimentary Rocks.* (Prentice Hall). (3 credits)

GEOLOGY 431B
Geochemistry

Prerequisite: Geology 301. An introduction to geochemistry including the chemical make-up of the solar system and the geochemistry of the atmosphere, hydrosphere, crust, mantle and core. The chemistry of igneous, sedimentary and metamorphic rocks, with some emphasis on the trace elements which characterize each. Anomalous trace element concentrations in rocks, soils and water and the application to mineral exploration geochemistry. In the laboratory the material discussed in the lectures is illustrated by geochemical calculations, trace element distribution maps and methods of geochemical analysis. Lec-

tures: 3 hours per week. Lab: 3 hours per week. Text: To be announced. (3 credits)

GEOLOGY 441A
Geomorphology

Prerequisite: Geology 301. Fluvial and slope processes, influence of climate, rock type and structure on the development of land forms, coastal features; aeolian processes, glacial and periglacial activity. Laboratory work emphasizes interpretation of aerial photographs and topographic maps and a field excursion to local area. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Ray, *Aerial Photographs in Geologic Interpretation and Mapping* (U.S.G.S.), Leopold, Wolman, and Miller, *Fluvial Processes in Geomorphology;* (Freeman). (3 credits)

GEOLOGY 443A
Structural Geology

Prerequisite: Geology 301. The recognition and origin of geologic structures. Primary structures, faults, folds and joints, principles of rock deformation. Laboratory includes a survey of methods of structural interpretation, structural experiments and field trips. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Dennis, *Structural Geology* (Ronald). Laboratory: Ragan: *Structural Geology* (Wiley). Blackader: *Guide for the Preparation of Geological Maps and Reports* (Department of Energy Mines and Resources). (3 credits)

GEOLOGY 445B
Tectonics

Prerequisite: Geology 443A. Relation of deformation to intrusion and sedimentation. Consideration is also given to multiple deformation, structural petrology, theories of geosynclines and plate tectonics. Laboratory: Consists of tectonic analysis using geologic maps. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Dennis, *Structural Geology* (Ronald). (3 credits)

GEOLOGY 501A/B
Reading Course

A reading and discussion course for Honours and interested Specialized students. The course involves reading in two disciplines of Geology chosen by the student, and discussion with assigned faculty members, 6 hours per week. (3 credits)

GEOLOGY 502Z
Undergraduate Thesis

Honours students in their final year are expected to show competence in isolating and examining a geological problem using techniques available within the department, working in conjunction with assigned faculty advisers. Course evaluation will be based on the student's performance in the investigation and on the written report. Specialized students may also take the course at the discretion of the Department. 6 hours per week. (6 credits)

GEOLOGY 505B
Precambrian Geology

Prerequisite: Geology 412, 443, 445 (may be taken concurrently). Evolution of the earth in the Precambrian era. Problems in Precambrian correlation, paleoclimates and structural history. Emphasis on Canadian and North American Precambrian areas. One term paper to be prepared. Lectures: 3 hours per week. Periodic Seminars. (3 credits)

GEOLOGY 512Z
Igneous and Metamorphic Petrology

Prerequisite: Geology 311, 313, 315, 412. Presentation and interpretation of phase relations, mineralogy, fabric, classifications and petrogenesis of the igneous rocks. The scope of metamorphism, the zone, grade and facies concepts of metamorphism, ACF and AKF diagrams. In the laboratory, megascopic and microscopic techniques are used in the examination of rocks representative of the more common igneous and metamorphic varieties. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Hyndman, *Petrology of Igneous and Metamorphic Rocks* (McGraw-Hill). Moorehouse, *The Study of Rocks in Thin Section* (Harper). References: Deer, Howie and Zussman, *An Introduction to the Rock Forming Minerals* (Longmans): Spry, *Metamorphic Textures* (Pergamon); Winkler, *Petrogenesis of Metamorphic Rocks*, 2nd Ed. (Springer-Verlag). (6 credits)

GEOLOGY 521A
Stratigraphy

Prerequisite: Geology 301, 321. Elementary principles of stratigraphy, correlation and time concept. A brief survey of major events in the geologic history of the earth and its inhabitants with special reference to North America. Emphasis will be given to the study of some type sections, paleogeography and organic aspects. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Dunbar & Waage, *Historical Geology*, (Wiley). (3 credits)

GEOLOGY 523B
Geology of Canada

Prerequisite: Geology 301, (521 or 321). Geologic study of the major geomorphic subdivision of Canada with special emphasis on stratigraphy, correlation, paleogeography, sedimentation and tectonics. Reading assignments and colloquium are used to probe into specific problems. Lectures: 3 hours per week. Colloquium: 1-3 hours per week. Text: *Geology and Economic Minerals of Canada*. 5th Ed., Econ. Geol. Series No. 1 of the Geological Survey of Canada. (3 credits)

GEOLOGY 531A
Mineral Physics

Prerequisite: Geology 311, 313, 412, 431. Selected aspects of the relationship of solid state characteristics of minerals to their conditions of formation and subsequent history. In the laboratory details of crystal structure, and considered and readily developed changes in solid-state conditions in minerals and metals are used to amplify the lecture material. Lectures: 2 hours per week. Lab: 4 hours per week. Texts: Deer, Howie and Zussman, *An Introduction to the Rock Forming Minerals* (Longmans); Spry, *Metamorphic Textures:* (Pergamon). References: Van Vlack, *Elements of Materials Science*, 2nd Ed., (Addison-Wesley); and/or Wulf et al, *The Structure and Properties of Materials*, (Wiley). (3 credits)

GEOLOGY 541A
Engineering Geology

Prerequisite: Geology 301. (Geology 443 and/or 551 are recommended). Engineering properties of rocks and soils. Ground water, Frost action and permanently frozen ground. Stream flow, erosion and deposition. Application of geology to engineering problems — tunnels, slope control, foundations, roads and airports, dams and reservoirs, river and shoreline control. Elements of rock and soil mechanics. The laboratory will be utilized in part for experimental determination of some of the engineering properties of soils and rocks and in part for discussion of engineering geology case histories. Lectures: 3 hours per week. Seminar: 3 hours per week. (3 credits)

GEOLOGY 551A
Economic Geology

Prerequisite: Geology 301, 311. The origin, classification and evaluation of ore and petroleum deposits. Laboratory includes problems in ore evaluation and petroleum geology, and the examination of suites from representative mining camps. Lectures: 3 hours per week. Lab: 3 hours per week. Text: To be announced. (3 credits).

GEOLOGY 552Z
Ore Deposits

Prerequisite: Geology 315, 443, 412. The origins, type of occurence and classification of

metallic mineral and non-metallic mineral deposits. The application of all fields of geology to a specific problem. Laboratory includes exercises on property and ore evaluation, an introduction to incident light microscopy and a series of examinations and a term project on suites from various ore deposits. Lectures: 3 hours per week. Lab: 3 hours per week. Text: Park and MacDiarmid, *Ore Deposits*, 2nd Ed. (Freeman). (6 credits).

51.13.4 Geography

Co-ordinator
M. BROOKFIELD

51.13.5 PROGRAMME

24 Minor Geography

For BSc Students:
Year I or II
9 Geog. 301^3, 311^3, 313^3
Year II or III
15 Geog Elec

For BA Students:
Year I or II
9 Geog 300^6, 301^3
Year II or III
15 $2\frac{1}{2}$ Geog Elec
Electives to be chosen with advice from Faculty.

51.3.6 COURSE DESCRIPTIONS

GEOGRAPHY 300Z
Foundations of Geography: Environment and Man

Prerequisite: None. A course designed for the student with no previous training who is interested in the geographical background to world and environmental problems. A study will be made of both physical and human factors in geography. Areas of concentration will be: energy, natural systems and the environment; landscape evolution, climate and resources; variation and spatial distribution of man's economic, social and political activities; the relationship of urban and non-urban man to the environment. Lectures: 3 hours per week, including. Lab. Texts: *Physical Geography Today*, (CRM Books 1974); Peter Haggett, *Geography: A Modern Synthesis*, (Harper & Row 1972). (6 credits)

GEOGRAPHY 301A
Maps and the Presentation of Statistical Data (I)

Prerequisite: None. This course is useful to anyone interested in how to read and analyze the information on a map; or in how to display data by means of maps and diagrams. It is basic to all other courses in Geography. Topics will include: analysis of topographic, land use, urban and weather maps; the application of maps to economic, social, medical and historical topics; the interpretation of aerial photographs. Lab: 3 hours per week. Texts: J. Tyner, *The World of Maps and Mapping*. (McGraw-Hill 1973); F. J. Monkhouse & H. R. Wilkinson, *Maps and Diagrams*, (Methuen, 1971, paperback). (3 credits)

GEOGRAPHY 303B
Maps and the Presentation of Statistical Data (II)

Prerequisite: None. The emphasis in this part of the course will be on thematic maps and statistical diagrams and graphs. Elementary quantitative techniques will be studied and their application to the analysis of geographic, economic, population and other scientific and problem data. Lab: 3 hours per week. Text: J. Tyner, *The World of Maps and Mapping*, (McGraw-Hill 1973); F. J. Monkhouse & H. R. Wilkinson, *Maps and Diagrams*, (Methuen, 1971, paperback). (3 credits)

GEOGRAPHY 311A
Climate and the Biosphere

Prerequisite: None. A study of the energy systems of the atmosphere and an introduction to environmental geography. The hydrologic cycle, world climates and weather systems. Interrelationships in the biosphere, and man's impact upon them. Weather and climate maps will also be studied. Lectures: 3 hours per week, including. Lab. Text: Strahler & Strahler: *"An Introduction to Environmental Science"*. (Wiley, 1974). (3 credits)

GEOGRAPHY 313B
Landforms and the Biosphere

Prerequisite: None, 311A a help. An introduction to the energy systems of the earth's crust and oceans, and the processes which have shaped our environment. The evolution of land forms and man's impact upon landscapes. The Pleistocene and Recent epochs in Canada, and their effects on soils and land use. The study of relevant topographic and land-use maps, and aerial photographs. Lectures: 3 hours per week, including Lab. Text: Strahler & Strahler: *"An Introduction to Environmental Science"*. (Wiley, 1974). (3 credits).

GEOGRAPHY 331A
Cultural Geography I: Man the Hunter

Prerequisite: None. A study of man-environment relationships through the ages. The Pleistocene inheritance and the spread of man across the earth. Man the hunter. The development of cultures and the growth of agricultural landscapes. Man's differing adaptations in pre-industrial societies, including the Eskimos and Indians. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 333B
Cultural Geography II: Man's Rise to Civilization

Prerequisite: None. The impact of technology upon cultures. The evolution of industrial man. The dichotomy between developed and developing countries. The population explosion and changing patterns of urban and non-urban societies. The future outlook. Lectures: 3 hours per week. (3 credits).

GEOGRAPHY 400Z
Biogeography

Prerequisite: Geog 300, or 311 and 313, or Introductory Botany, Biology or Environmental Studies. A study of biotic communities and interaction within ecosystems. Topics will include: the scope of biogeography; the biosphere, food chains and energy exchange within ecosystems. Relationships between vegetation and fauna, and landforms, soil, hydrology and climate. Local, continental and world patterns of distribution; methods of dispersal, migration and population checks.

Field studies will be an integral part of the course. Lectures: 3 hours per week, including Lab. Field trips. (6 credits)

GEOGRAPHY 411A
Geography of Location I

Prerequisite: Geog 303 or 491 or equivalent. This course aims to provide the background to locational theory and spatial analysis in economic, human and physical geography. The classical theories of location in agriculture, industry and settlement of von Thunen, Weber, Christaller, Losch and others will be examined; their relevance to the different stages of development and resource use in First and Third World countries will also be discussed. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 413B
Geography of Location II

Prerequisite: Geog 411. A study of manufacturing and marketing with particular reference to Canada and the United States. Spatial patterns of innovation and diffusion. Regional and interregional flows and networks. Comparison with organization and development in the developing countries. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 420Z
The Geography of Canada

Prerequisite: Geog 300 or 333 or permission of department. The Indian, Eskimo and European settlement and early development of Canada. The resource base. Migration and changing land use. Emergence of cultural and economic regions. The growth of cities and of industrialization. Problems of a developed economy, with special reference to Quebec and Ontario. The demographic transition; federalism, nationalism and their consequences. The significance of development schemes in James Bay and the North. Canada's interaction with the U.S.A. and Latin America; her world position. Lectures: 3 hours per week. (6 credits)

GEOGRAPHY 421A
Urban Geography I

Prerequisite: Geog 300 or permission of department. The evolution of the city; its function and economic base. An examination of urban internal structure, land use, and social and political geography. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 423B
Urban Geography II

Prerequisite: Geog 421 or permission of department. The North American and Canadian City. Problems and politics of urban growth and development. Contrasts with Old World and Third World Cities. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 430Z
The Developed Countries

Prerequisites: Geog 300, 333 or 411 or permission of department. An examination of the economic geography and contrasting organization of the EEC, the U.S.A. and the U.S.S.R. Problems of urban and industrial growth and decay, population trends, and diminishing raw resources. World trading patterns and dependence on the Third World. Lectures: 3 hours per week. (6 credits)

GEOGRAPHY 440Z
The Third World

Prerequisite: Geog 300 or 333 or 411 or permission of department. The economic geography, problems and future of the developing countries. The importance of cultural traditions; the colonial legacy; the struggle for self-sufficiency. Agricultural and industrial resources, local and world trading patterns, tourism. Urbanization and increasing population pressure; outlook for 2000 A.D. Lectures: 3 hours per week. (6 credits)

GEOGRAPHY 450Z
The Geography of the Far East

Prerequisite: Geog 300 or 333 or 411 or permission of department. The economic and political geography of the Far East. A study of the contrasts in resources, organization and development of the People's Republic of China, Japan, and S.E. Asia. Lectures: 3 hours per week. (6 credits)

GEOGRAPHY 460Z
Geography of Northern Lands

Prerequisite: Geog 300 or 333, or permission of department. A study of the northern lands in North America. Comparisons with Europe and the U.S.S.R. The physical characteristics, peoples, resources, past and present economies. A discussion of possible future developments and problems. Lectures: 3 hours per week. (6 credits)

GEOGRAPHY 471A
Introduction to Historical Geography

Prerequisite: Geog 333 or equivalent. An examination of the geographical factors in historic events; of the distribution and migration of peoples; of differing settlement patterns and the growth of cities. The effect of physical boundaries in war and peace. The agricultural and industrial revolutions and their effects, with special reference to Europe. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 473B
Historical Geography of North America

Prerequisite: Geog 471, 333 or equivalent. This course will be given with special reference to Canada. A study of early settlement and land use, and the effects of conflicts, treaties, and successive immigrations. The mercantile and colonial eras, and changing cultural and agricultural landscapes. Differing settlement patterns, including the seigneurial and township systems in Quebec. The growth of cities, industries and trade networks, and the emergence of Modern America. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 481A
Political Geography

Prerequisite: Geog 333 or equivalent; or permission of department. Study of the political map and the spatial growth of states: of frontiers and boundaries, cities and federalism, systems and disintegration of empires. Votes, migrations and environmental stress. Spatial relationship at the municipal, national and international levels. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 483B
Population Geography

Prerequisite: Geog 303 or equivalent. The characteristics, dynamics and distribution of world populations. Census data and techniques of census analysis. Rural/urban populations and their varying proportions. The vital processes of population change; natural increase and migration. Growth rates, population policies, and population pressure. Study of selected groups. The demographic prospect. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 491A
Geographical Analysis

Prerequisite: Geog 303 or equivalent. The application of quantitative techniques to geographical data. Analysis of point patterns, spatial distributions, and networks. Non-parametric methods. Probability and prediction. Regression and multivariate techniques in the analysis of geographical relationships. How to test the significance of data. Lectures: 3 hours per week. (3 credits)

GEOGRAPHY 493B
Evolution of Geography

Prerequisite: See Chairman. The development of geographical thought since earliest times. Changes in the twentieth century; the quantitative revolution. Concepts and present day specialisms. Geography's contribution to environmental studies and to an understanding of the complexities of the modern world. Lectures: 3 hours per week. (3 credits).

51.14 Department of History

Associate Professor and Chairman
W. E. AKIN

Professor
C. B. O'KEEFE S.J.

Associate Professors
F. G. W. ADAMS
R. T. COOLIDGE
W. H. HUBBARD

Assistant Professors
M. G. DECARIE
M. MASON
R. TITTLER
M. VIPOND

Lecturer
R. S. PORTER

51.14.1 PROGRAMMES

62 BA Honours in History

Year I
18 Hist Elective*

Year II
6 Hist Elective #
12 Hist Honours Elective **

Year III
6 Hist Honours Tutorial
6 Hist Honours Elective **
6 Hist Elective #
6 Hist Elective ##
2 Honours Comprehensive Examination

**Hist credits chosen from Survey or Intermediate courses*
#Hist credits chosen from Survey, Intermediate or Honours courses
***Hist credits chosen from Honours courses*
##Credits from an approved course in a related discipline or a history course
Note: A student may enter the Honours programme after completing two history courses. To enter and remain in Honours, the student must have an average of 70% or above in all history courses.
Of the Honours history courses in the second and third year, one must be in a field other than the tutorial.
All students will be assigned a faculty advisor with whom they must consult concerning their selection of courses.

72 BA Joint Honours in English and History

6 Engl 418Z
18 Engl credits chosen from three different periods, at least two of which should be supported by parallel Hist courses
6 Engl Elec
6 Engl or Hist Elec
12 Hist credits to parallel Engl courses
12 Hist Honours Seminars
6 Hist Elec
6 Joint Engl/Hist tutorial, Engl or Hist 590Z

Note:
Students may take a Specialization (60 credits), or Joint Honours (72 credits) in English-History. Students may take a Double Major in History and in another department. They may also couple a Major in History with a Minor (24 credits) in any of the programmes listed under Interdisciplinary Studies, such as: Third World Studies, Canadian Studies, Women's Studies, Medieval Studies. (see § 51.15)

60 BA Specialization in English and History

12 Engl credits chosen from two different periods which should be supported by parallel Hist courses
18 Engl Elec
12 Hist credits to parallel Engl courses
18 Hist Elec

NOTE: This programme replaces the Joint Majors Programme.

36 BA Major in History

Year I
12 Hist Elec*

Year II
12 Hist Elec #

Year III
12 Hist Elec #

**Hist credits chosen from Survey or Intermediate courses*
#Hist credits chosen from Survey, Intermediate or Honours courses. Choice from Honours courses with permission of instructor only.

INTRODUCTORY SURVEY COURSES

HISTORY 301A/B
The Nature and Practice of History

The course embraces two fundamental concerns. Students will examine the nature of historical enquiry: its varieties, purposes, traditions, and place in contemporary society. In addition, they will receive a systematic introduction to the practical aspects of critical scholarship: the use of the library, methods of research, and forms of writing critical essays. (3 credits)

HISTORY 303A
History of Canada, Pre-Confederation

A survey of Canadian history, from settlement to Confederation, which emphasizes readings and discussions on selected problems. (3 credits)

HISTORY 305B
History of Canada, Post-Confederation

A survey of Canadian history from Confederation to the present, which emphasizes readings and discussions on selected problems. (3 credits)

HISTORY 306Z
History of Quebec

Social, economic and political history of Quebec from the origins to the present, with emphasis on the period since 1760. (6 credits)

HISTORY 307A/B
The Indian in Canadian History

Survey of Amerind history from 1500 to the present day. Students will be encouraged to carry on further studies in areas of special interest. (3 credits)

HISTORY 308Z
(Also given as Interdisciplinary Studies 400Z § 51.15.12)
Native Peoples of Canada

Examines the Native Canadian experience from a multidisciplinary perspective. Native and non-Native participants are invited from throughout Canada to speak on history, law, education and culture relating to the Indians and Eskimos of Canada. Term paper or project, and exam. Text: Walsh, *Indians in Transition*. (6 credits)

HISTORY 311A
History of the United States, to 1877

Survey of American history from settlement to 1877. The course will deal with the political and economic framework of American history, and with social and cultural trends. (3 credits)

HISTORY 313B
History of the United States, since 1877

Survey of American history from 1877 to the present. The course will deal with the political and economic framework of American history, and with social and cultural trends and movements. (3 credits)

HISTORY 320Z
(Also given as Classics 330Z § 51.6.2)
Greek and Roman History

May be taken as either a History or Classics course. A survey of Greek and Roman history from earliest times to the fall of the Roman Empire in the West, viewed primarily through the eyes of contemporaries, emphasizing those issues that have excited and continue to arouse interest and controversy among historians. Though Athens for its unique cultural and political achievement and Rome for its administrative genius and imperial successes inevitably occupy the central interest, these cities will be examined from the viewpoint of their critics as well as admirers. The credibility of the ancient evidence will be carefully assessed. Due attention will be directed towards social and economic as well as purely political factors. The course will be designed to demonstrate the extent to which the lower classes — peasants, soldiers, sailors, craftsmen, and traders — contributed as much to the classical achievement as kings, emperors, and aristocrats. (6 credits)

HISTORY 322Z
(Also given as Classics 340Z § 51.6.2)
The Ancient World

May be taken as either a History or Classics course. After a preliminary survey of Pre-History, a thorough study of the first civilizations: Mesopotamia (Sumer, Akkad, Babylon, Assyria), Egypt, Phoenicia, Ugarit, Canaan, Minoan Crete, India and China in their early Bronze Ages. Ancient sources, wherever possible, will be used. (6 credits)

HISTORY 324Z
(Also given as Classics 434Z § 51.6.2)
Introduction to Archaeology

May be taken as either a History or Classics course. Archaeology as a science; its purpose, methods, and techniques. The relationship of Archaeology to Pre-History, Ancient History, Fine Arts, and Anthropology. While the course will deal principally with Classical Archaeology and Greek and Roman Art, the Archaeology of Africa, the Orient, and the Americas will also be considered. (6 credits)

HISTORY 330Z
History of Medieval Europe

A study of Western Europe (France, Germany and Italy with occasional reference to neighboring areas) during the period 300 to 1300 A.D. The purpose of the course will be to discover the positive meaning of the term "medieval" by an examination of the political and cultural interaction of the Greco-Roman, Judeo-Christian and Germanic traditions, as revealed in primary sources. Readings will be assigned from a number of recent collections of translated contemporary source material which will form the basis for class discussions. Required Reading: C. Warren Hollister, *Medieval Europe*. (6 credits).

HISTORY 335A
Renaissance Europe

Will explore the elements of transition from the Medieval to the Modern World. Particular attention to changing social and moral values (as expressed in art, literature and social behaviour) and to the growth of nation states in Europe. (3 credits)

HISTORY 337B
History of the Reformation

A study of the religious, social and political doctrines of the age of the Reformation. Emphasis on the Medieval and Renaissance origins of Reformation ideas, and on the ways in which this era has proven seminal for the development of modern Western civilization. (3 credits)

HISTORY 340Z
History of England, 1485 to the Present

Emphasis on the development of English society and political structure, with some attention to religious, cultural, and economic development as well. (6 credits)

HISTORY 350Z
The Ancien Regime, 1660-1789

A historical survey of this period, and a study of selected themes and problems: the cultural and political supremacy of France; the strength and weakness of absolute government as seen in the reign of Louis XIV; the resurgence of the nobility; unrest and social and economic reform; contemporary appraisals of the ancien regime. (6 credits)

HISTORY 354Z
The World Since 1914

A discussion of the main trends of world history — political, diplomatic, socio-economic and cultural — since World War I. Special attention will be given to European developments. (6 credits)

HISTORY 358Z
History of Modern Italy
Survey of the history of modern Italy. Emphasis will be placed on the Risorgimento, the crisis of liberal democracy, the rise of fascism and post-war problems. (6 credits)

HISTORY 360Z
Europe and the Industrial Revolution: The Origins of Modern Society
An examination of change and stability in the social and economic structure of Europe during the first age of industrialization, ca. 1760 to ca. 1900. The course will investigate such themes as the growth of capitalism, the displacement of a corporate, status society by a society based on economic classes, the growth of industry and cities and their impact on the traditional agrarian order of the ancien regime, and the role of overseas imperialism in the economic development of modern Europe. For advance reading the student might consult D. Landes, *The Unbound Prometheus* or T. Kemp, *Industrialization in Nineteenth Century Europe*. (6 credits)

HISTORY 362Z
European Society and Economy in the Twentieth Century: The Crisis of Capitalism
An examination of stability and change in the social and economic structure of Europe in the contemporary age. The course will investigate such themes as the crisis of *laissez-faire* capitalism and the increasing intervention of the state in social and economic affairs, the breakdown of the world economic order in 1929/30 and the rise of fascist economics and the destruction of the European socio-economic structure in World War II and its post-war recovery. For advance reading the student might consult D. Landes, *The Unbound Prometheus* and S. Clough, *et al., Economic History of Europe: Twentieth Century*. The course is especially recommended to students majoring in economics and sociology. (6 credits)

HISTORY 364Z
(Also given as German 364Z § 51.17.3)
Germany and Austria in Modern Times
Socio-economic change and the development of nation-states in German Central Europe from the eighteenth century to the present. For advance reading the student might consult H. Holborn, *A History of Modern Germany*. (6 credits)

HISTORY 366Z
France since 1815
A study of French history since the defeat of Napoleon, with special emphasis on social and intellectual developments. (6 credits)

HISTORY 368Z
History of Russia
Survey of the history of Russia from the origins to the present, with emphasis on the Russian Revolution of 1917 and the Soviet period. (6 credits)

HISTORY 372Z
A History of China
In the first term the course will examine the evolution of Chinese society from approximately 2000 B.C. to the Nineteenth Century A.D., stressing the development of political and social structures, the dynastic cycle, and early contacts with the West. In the second term the Western challenge to China in the modern period will be considered, the nature of this penetration, its effects, and the reaction to it in the form of the rise of nationalism and the victory of communism. (6 credits)

HISTORY 373A
A History of Modern Japan
The course will consider the impact of Western civilization and technology on Japan in the 19th and 20th centuries. (3 credits)

HISTORY 375B
A History of Modern India
The course will consider the impact of Western civilization and technology on India in the 18th, 19th and 20th centuries. (3 credits)

HISTORY 376Z
Introduction to the History of Africa
This course concerns itself with Africa in the nineteenth century, European imperialism in the late nineteenth and twentieth centuries. African nationalism and resistance movements and neo-colonialism. (6 credits).

HISTORY 381A
(Also given as Political Science 455A § 51.20.3)
The Middle East in World Politics
May be taken either as a History or a Political Science course.
Islamic Heritage: Nationalism, Zionism and Contemporary Problems (Arab-Israeli Conflict: U.S.A.-U.S.S.R. Power Struggle). (3 credits)

HISTORY 383B
(Also given as Political Science 457B § 51.20.3)
Mid-East Political Systems
May be taken either as a History or a Political Science course. A comparative study of a selected number of Mid-East Governments (Turkey, Egypt, Libya, Syria, Iraq, Lebanon, Israel, Jordan, Saudi Arabia and Yemen). (3 credits)

INTERMEDIATE COURSES

These courses cover geographical or thematic specialties beyond the level presented in the introductory courses. Greater stress is placed on student participation in discussions than on lectures. Prerequisites are normally required.

HISTORY 402Z
Approaches to Canadian History
Prerequisite: Canadian history survey at CEGEP or university. Canadian history as seen by propagandists, rebels, reactionaries and poets. Students will be expected to read widely. (6 credits)

HISTORY 403A
Interpretations of Canadian History
Prerequisite: Canadian survey. Canadian History has been seen in many different ways — as part of British History, as a rejection of Britain, as a struggle between exploiters and exploited. This course examines the leading interpretations and the reasons for their differences. (3 credits)

HISTORY 404Z
Protest Movements in Canada since Confederation
Prerequisite: Canadian history or political science survey. An examination of the social and intellectual origins of political protest in Canada since 1867. Topics will include agrarian revolt, labour organization and sectional discontent, with emphasis on such third parties as Canada First, Progressive Party, C.C.F., Social Credit, Union Nationale and Parti Québecois. (6 credits)

HISTORY 405B
The Ideology of French Canada
Prerequisite: Any Canadian history at CEGEP or university. A study of the ways in which francophone Canadians have seen their societies and their roles in Canada. While the course will emphasize the francophones of Quebec, some time will be spent on those who live in such other parts of Canada as New Brunswick and the West. (3 credits)

HISTORY 407A
History of Montreal
Prerequisite: Any Canadian history at CEGEP or university. A study of the origins of the city, its role in the Empire of the St. Lawrence, and its rise to metropolitan dominance in Canada. Special emphasis on economic development and on ethnic groupings. (3 credits)

HISTORY 409B
History of the Canadian North
Prerequisite: Any Canadian history at CEGEP or university. An intense study of the advance of the northern frontier of Canada, with emphasis on

the period 1840-1945. The course will stress exploration, problems of sovereignty, conflict of cultures, and economic development. (3 credits)

HISTORY 410Z
American Social and Intellectual History

Prerequisite: American survey. The course will deal with the origins and development of social institutions, colonial, regional and national economics, class structure, popular culture, literature, ideas and myths in the United States. First term covers from settlement to Civil War, second term from Civil War to present. (6 credits)

HISTORY 411A
The United States in the 20th Century: 1900-1941

Prerequisite: American survey. An examination of the political, economic, social and cultural trends and conflicts from the beginning of the Twentieth Century to World War II. (3 credits)

HISTORY 413B
The United States in the 20th Century: 1941 to Present

Prerequisite: American survey. An examination of the political, economic, social, and cultural trends and conflicts from World War II to the present. (3 credits)

HISTORY 416Z
History of Women in England and North America

Prerequisite: Permission of instructor. Thematic and issue oriented discussion of the problems in women's history in North America since 1800. A comparative examination of the women's movement in Canada, the U.S. and England, with emphasis on the myth of womanhood and the realities of the legal, economic and social position of women. (6 credits)

HISTORY 417A
Canada Views the United States

Prerequisite: Canadian survey. An examination of Canadian attitudes to the United States from 1776 to the present, with respect to both specific incidents and general trends. Emphasis will be placed on the discussion of primary source material. (3 credits)

HISTORY 419B
A Literary History of Twentieth Century Canada

Prerequisite: Canadian survey. An examination of some of the major themes of Canadian history in the 20th century as seen by Canadian novelists, English and French. Themes studied will include the struggle for survival; regional, ethnic and religious plurality; and the response to urbanization and industrialization. (3 credits)

HISTORY 430Z
Readings in Medieval History

Prerequisite: Survey course or permission of instructor. This course will consist mainly of discussion periods using translated primary source materials taken from standard collections. Outside reading will also be required. Term papers will be assigned, and mid-term tests will be given. (6 credits)

HISTORY 431A
Comparative Renaissances in the Western Tradition

Prerequisite: Permission of instructor. A colloquium on selected renaissances, including the 12th Century European Renaissance, the Italian Renaissance of the fourteenth and fifteenth centuries, the American Renaissance of the nineteenth century and possibly the Irish Renaissance of the same century. Students will use literary as well as more traditional historical sources to explore such questions as: what is a cultural "renaissance"? What forms help to create a cultural renaissance? How have traditional societies reacted to he phenomenon of cultural renaissances? Emphasis on discussion and research papers rather than lectures in a formal sense. (3 credits)

HISTORY 433B
Comparative Counter-Cultures in the Western Tradition

Prerequisite: Permission of instructor. A colloquium on selected counter-cultural movements, including the medieval counter-culture tradition, the Anabaptists of the 16th century, the English counter-cultures of 1649-1660. These classic movements will then be contrasted with such modern movements as the literary and artistic counter-culture of Gertrude Stein's Paris, the social counter-culture of the 19th century North American communal movement, and finally the counter-cultures in the same society in the past decade. Through a variety of sources, including literary and artistic, students will explore the nature of counter-cultural movements in the context of traditional societies. (3 credits)

HISTORY 446Z
History of British Diplomacy

The course will attempt to ascertain and evaluate the guiding principles of Britain's foreign policy as they are illustrated by practice in the nineteenth and twentieth centuries. The study will embrace the struggle to maintain the balance of power within Europe, the acquisition of Empire, British involvement in the Great War, the period between the wars, with special reference to the League of Nations, and British policy since World War II, with the European Economic Community. Certain aspects of contemporary international relations theory may also be discussed. There will be frequent seminars. (6 credits)

HISTORY 450Z
Problems in Church and State in Modern Europe

An examination of some of the important themes in Church and State relations in Europe with emphasis on early modern Europe. Some of the themes to be discussed are: the changing theory in church and state relations; the growth of secularization; the development of the notion of religious tolerance; established churches and non-conformist churches; the church and social unrest. (6 credits)

HISTORY 452Z
Social History of Early Modern Europe: Tradition and Transition

Prerequisite: European history course or permission of instructor. A study of trends in social change in 17th and 18th century Europe in institutions, classes, and orders, with some emphasis on what remained from the medieval and Renaissance periods. Of special interest will be the developing towns and cities, educational institutions, the publishing trade, travel, the growth of social criticism. (6 credits)

HISTORY 454Z
19th Century Civilization seen through the Novel

Prerequisite: European survey or permission of instructor. An examination of the major currents in 19th century European history as seen in the novels of such writers as Dickens, Balzac, Stendhal, Gogol, Dostoevsky, Flaubert and Zola. (6 credits)

HISTORY 455A/B
History of Ireland

A survey course that traces the history of Ireland from 432 to the present. Emphasis will be on the 19th and 20th centuries. Special attention will be given to the development of Irish nationalism and relations with Great Britain. Irish music and literature will be used to supplement the historical perspective. (3 credits)

HISTORY 456Z
20th Century Civilization seen through the Novel

Prerequisite: European survey or permission of instructor. A study of the main themes in contemporary history as expressed in the novels of

such writers as Remarque, Malraux, Hamsun, Solzhenitsyn, Pasternak, Camus, Mailer. (6 credits)

HISTORY 461A
Poverty and Class in the Nineteenth Century
Prerequisite: European survey. An analysis of the causes, extent and effects of poverty and social stratification in selected European societies during the age of industrialization. For advance reading the student might consult J. Kuczynski, *The Rise of the Working Class* and E. Midwinter, *Victorian Social Reform*. (3 credits)

HISTORY 463B
Nazism and Fascism in Central and Eastern Europe
Prerequisite: European survey. An analysis of the sources and policies of the National Socialist Movement in Germany and related fascistic political movements in Austria, Hungary and Rumania. For advance reading the student might consult K. Bracher, *The German Dictatorship* and S. Woolf, ed., *The Nature of Fascism*. (3 credits)

HISTORY 471A
Colonialism and Neo-Colonialism in Africa
Prerequisite: African survey course or permission of instructor. A study of the liberation movements in Guiné, Angola, Mozambique, Rhodesia and Namibia. (3 credits)

HISTORY 473B
Africa and the Caribbean
Prerequisite: African survey course or permission of instructor. The African origins of the people of the West Indies, the slave trade, and the modern history of the Caribbean Islands will be studied. (3 credits)

HISTORY 492Z
History of Education
Prerequisite: University II or III level or permission of instructor. A survey of the History of Education from the Greeks to the present day. (6 credits)

HISTORY 497A
Independent Study Programme
See Department Chairman for further information. (3 credits)

HISTORY 499B
Independent Study Programme
See Department Chairman for further information. (3 credits)

ADVANCED SEMINARS: HONOURS COURSES

The following courses are open to honours students in all departments. History majors and students majoring in other departments may take these courses with the permission of the instructor, providing they have completed an introductory course in the same area.

HISTORY 502Z
Problems in Canadian Intellectual History
Prerequisite: Canadian survey. A study of social and political thought, with emphasis on nationalism in both English and French Canada. (6 credits)

HISTORY 504Z
The City in Canadian History
Prerequisite: Canadian survey. A study of urban development. For the first term, study will be devoted to world urban history. In the second term, study will concentrate on urban history in Canada. Students will have an opportunity to carry out original research in areas of interest to them. (6 credits)

HISTORY 506Z
Canada in the 1920's and 1930's
Prerequisite: Canadian survey. The course will examine many facets of Canadian life, economic, political, social and intellectual, during the inter-war decades. Emphasis will be on individual research projects. (6 credits)

HISTORY 510Z
Problems in American History
Prerequisite: American survey. An intensive study of themes in recent American history, emphasis on historiography, social and intellectual history. (6 credits)

HISTORY 520Z
(Also given in alternate years as Classics 432Z § 51.6.2.)
Julius Caesar and Alexander the Great
Prerequisite: Ancient history course. May be taken either as a History or Classics course. Three centuries separate them, perhaps history's greatest field marshals, reformers, and visionaries, two men more than all others loved, despised, admired, and condemned by contemporaries and posterity alike. This course will seek to discover them as they were, the worlds they conquered, and what Alexander and Caesar wanted and planned their worlds to be. (6 credits)

HISTORY 522Z
(Also given in alternate years as Classics 432Z § 51.6.2)
Human Beginnings: The Stone Ages
May be taken either as a History or a Classics course. The origin of man and man's place in evolution and in nature, Man the toolmaker: australopithecines, homo habilis, homo erectus, Peking man, Java man, Solo man, and others. The fossil evidence and taxonomic problems. Man the hunter: meat-eating, intelligence, and sexual differentiations. Territoriality and aggression. The struggle for existence and the survival of the fittest: Darwinism, Marxism, and sociology.

Palaeolithic cultures: Abbevillean, Acheulean, Clactonian, and Mousterian. Neanderthal and Cro-Magnon mixtures? Man the artist. From Perigordian to Magdalenian. Epipalaeolithic and Mesolithic societies. The Neolithic revolution. Stone Age cultures of today. Importance and relevance of prehistory. Homo ludens. (6 credits)

HISTORY 530Z
Priesthood and Politics in the Middle Ages
Prerequisite: Intermediate course in Medieval history or permission of instructor. A study of the working out in practice, in the relations between the holders of temporal and spiritual power, of the medieval concepts of *sacerdotium* and *imperium*. (6 credits)

HISTORY 542Z
Tudor England
Prerequisite: English history survey. A study of the political, religious and social problems of the Tudor Age (1485-1603). The seminar will consist of regular discussions and individual research papers, centred around the broad themes of the age. It is hoped that students will be able to use primary as well as secondary sources. (6 credits)

HISTORY 544Z
Religious Dissent and Social Protest in the English tradition, 1530-1660
Prerequisite: English history survey. Examination of the Dissenting Religious groups in the English tradition, including the Lollards, Puritans, Presbyterians, Baptists, Quakers, etc., and their impact on society and social protest movements. (6 credits)

HISTORY 546Z
Stuart England
Prerequisite: English history survey. A study of the political, social, and religious problems of the Stuart Age, with an emphasis on the era from the accession of James I (1603) to the Glorious Revolution of 1688-9. (6 credits)

HISTORY 550Z
The Enlightenment: 18th Century Intellectual History
Prerequisite: Early modern European survey. A study of the European Enlightenment with emphasis on its development in France. The main themes in the movement will be explored, e.g.

nature, reason, tolerance, progress, happiness, etc.: the careers of the leading philosophes and their chief writings will be examined. Various reactions to the Enlightenment in the eighteenth and nineteenth centuries will be studied. (6 credits)

HISTORY 552Z
The French Revolution and Napoleon
Prerequisite: Introductory survey course in 18th or 19th century Europe. An examination of the socio-economic, political and religious changes in French society between 1787 and 1815. (6 credits)

HISTORY 554Z
The Revolutionary Tradition in 19th Century France
Prerequisite: French history or Modern European. An analysis of the revolutions of 1848 and 1871. (6 credits)

HISTORY 560Z
Studies in 19th Century Central Europe: The Era of Bismarck
Prerequisite: Survey in German history or nineteenth century Europe. An analysis of socio-economic change and the growth of nationalism in the Habsburg and Hohenzollern states during the age of Bismarck. (6 credits)

HISTORY 562Z
Studies in 20th Century Central Europe: Fascism and Communism
Prerequisite: Survey in German history or twentieth century Europe. Problems in the modernization of the socio-economic and political order in Central and Eastern Europe following the dissolution of the Habsburg and Hohenzollern empires. Special attention will be paid to the role of fascism and communism in promoting social change. For advance reading students might consult R. Dahrendorf, *Society and Democracy in Germany* and H. Seton Watson, *Eastern Europe, 1918-1941*. (6 credits)

HISTORY 564Z
Problems in the Socio-economic History of Modern Europe
Prerequisite: Introductory survey course in 19th or 20th century Europe. Selected themes in the evolution of industrial society in Europe: social stratification, urbanization and its effects, social mobility and changing composition of elites. The course will focus mainly on England and Central Europe in the nineteenth and twentieth centuries. (6 credits)

HISTORY 570Z
East Asia Today (China and Japan)
,Prerequisite: Chinese and/or Japanese survey course. The first term will deal with the Chinese Revolution; the second term with Japan since World War II. (6 credits)

HISTORY 572Z
South Asia Today (India and Vietnam)
Prerequisite: Some knowledge of Indian and Chinese history. In the first term the seminar will deal with issues in Indian politics, society, economy and diplomacy since Independence in 1947 — the nation's problems and prospects. In the second term the seminar will study the Vietnamese people's struggle for freedom since World War II, and will contrast conditions of life in North and South Viet Nam. (6 credits)

HISTORY 576Z
Imperialism and Revolution in the Third World
Prerequisite: Asian and African survey courses or permission of instructor. A comparison of the techniques and effects of imperialism in Asia, Africa and Latin America during the late 19th and 20th centuries. Modern independence and revolutionary movements in these areas will be examined from a comparative perspective. (6 credits)

HISTORY 590Z
Joint History-English Tutorial
A tutorial conceived as an interdisciplinary effort between the Departments of History and English, and designed specifically to satisfy a requirement for the History-English joint honours program. Tutorials may be arranged with members of the respective departments. (6 credits)

HISTORY 594Z
Special Studies
(6 credits)

HISTORY 596Z
Honours History Tutorial
The history tutorial is open to honours students only. All honours students in history must select an area of concentration from the list below, and a tutorial director. The tutorial director will supervise an intensive reading programme in the student's area of special interest, and consult with the student individually to discuss his reading programme.
— 01 North American History
-- 02 British History
— 03 Ancient History
— 04 European History, 400-1660
— 05 European History, 1660 to the present
— 06 The Third World
(6 credits)

HISTORY 598Z
Honours History Thesis
Optional project open to honours students only. At the end of the second year students must choose, in consultation with their tutorial director, a research topic for intensive analysis during the third year. The student will independently research the topic and present a paper at the end of the third year. Students may concentrate in the same areas of concentration as for History 596. (6 credits)

HISTORY 599
Honours History Comprehensive Examination
(2 credits)

The following course is a university level course which was offered in the year indicated, but which did not appear in the official Calendar.

HISTORY
1970
History 334Z
Problems in Urban History (6 credits)

51.15 Centre for Interdisciplinary Studies

Acting Director
Dr. M. G. Hogben
(Assistant Professor, Chemistry Department)

OBJECTIVES:

To accept the challenge implicit in living in a world where specialization can so easily be synonymous with narrowness of vision. This narrowness can be overcome if the specialist is able to see the interconnection between all fields of endeavor. Interdisciplinary Studies attempts to integrate knowledge, providing the specialist with a perspective which his discipline alone cannot give. Our primary aim, therefore, is to work with specialists and specialization rather than to provide a substitute for them.

1. We hope to achieve this objective through individual *courses* in Interdisciplinary Studies which are of high academic quality and are offered to students on an elective basis.

2. This process of integration can also be achieved through a *Minor*, i.e. 24 credits in a particular field which may be complementary to an existing Major, Specialization or Honours Programme. Such a Minor permits a more exhaustive treatment of an area than does an individual course, and may entail taking courses offered through Departments in addition to one or more seminars in Interdisciplinary Studies.

3. We must also construct *programmes* which constitute 'neglected areas' of curriculum, neglected because they do not fit neatly into any one department. Many of these programmes concern areas which have become important recently, i.e. after the evolution of the more traditional disciplines. Thus we have programmes in Canadian Studies and in Recreation and Leisure Studies. This objective is achieved through the coordination of existing courses in departments together with one or more seminars in Interdisciplinary Studies. Each programme will have its own coordinator and counselling service.

4. We hope to assist those students whose areas of interest, although truly academic, are not catered to in any single department or programme. A Self-Elected Specialization programme has been designed whereby a student may, in close consultation with the Director of Interdisciplinary Studies and other qualified faculty, submit his own programme consisting of ten existing courses from various departments. Care is taken that such programmes constitute a coherent whole both by the selection of courses and by the possible addition of a tutorial whereby the student in question integrates his knowledge under the direction of one faculty member. Students are accepted into a Self-Elected Specialization programme only after the Centre is satisfied that no other department can adequately cater to his academic aspirations.

NOTE: Students should register with the Centre for Interdisciplinary Studies if they intend to pursue any of the following programmes or minors.

51.15.1 CANADIAN STUDIES PROGRAMME

Coordinator:
Dr. E. CAMERON

The Canadian Studies programme seeks to give students a better understanding of the diverse origins and multi-faceted character of Canada.

Selection Rules

1. History $303A^3$ and $305B^3$ or History $306Z^6$.
2. English $454Z^6$ or English $333A^3$ and $335B^3$.
3. 6 credits in Etudes Françaises: to be decided according to the student's ability in French.
4. 6 credits from any discipline other than History, English and Etudes Françaises.
5. Canadian Studies Seminar Inte. $511A^3$ and $513B^3$: In each half course two professors from different disciplines discuss a common Canadian theme or problem with students.

Requirements for a B.A. with Specialization in Canadian Studies (Interdisciplinary Studies)

Courses totalling 60 credits selected from the list of Courses with Canadian Content § 51.15.2 incorporating the five selection rules listed above.

Requirements for a B. A. with a Major in Canadian Studies (Interdisciplinary Studies)

Courses totalling 42 credits selected from the list of courses with Canadian content in-

corporating the five selection rules listed above.

Requirements for a B. A. with a Minor in Canadian Studies (Interdisciplinary Studies) to be taken supplementary to a major, specialization or honours in another department.

Courses totalling 24 credits selected from the list of courses with Canadian content according to rules 1, 2, 3 and 4 as listed above.

51.15.2 COURSES WITH CANADIAN CONTENT

For a complete course description see the appropriate section

I. English § 51.10.3
- 454Z⁶ Introductory Survey of Canadian Literature (Major and Honours)
- 333A³ Canadian Literature I
- 335B³ Canadian Literature II
- 363Z⁶ Canadian Criticism, Thought and Controversy
- 456Z⁶ Advanced Courses in Canadian Literature

II. Études Françaises § 15.12.3
- 359A³ Littérature québécoise: le roman
- 361B³ Littérature québécoise: le roman
- 365Z³ Littérature québécoise: la poésie contemporaine
- 369B³ Litérature québécoise: le théâtre
- 501A³ Quebec Literature (in English)
- 503B³ Quebec Literature (in English)
- 571A³ Civilisation Française: ses rapports avec le Quebec
- 573B³ Civilisation Française: ses rapports avec le Quebec
- 577B³ Histoire et mouvement des Idées au Québec
- 596Z⁶ Littérature Comparée (française et anglaise)

III History § 51.14.2
- 303A³ History of Canada — Pre-Confederation
- 305B³ History of Canada — Post-Confederation
- 306Z⁶ History of Quebec
- 307A/B³ The Indian and Canadian History
- 308Z⁶ Native Peoples of Canada
- 402Z⁶ Approaches to Canadian History
- 403A³ Interpretations of Canadian History
- 404Z⁶ Protest Movements in Canada Since Confederation
- 405B³ The Ideology of French Canada
- 407A³ History of Montreal
- 409B³ History of the Canadian North
- 417A³ Canada Views the U.S.
- 419B³ A Literary History of Twentieth-Century Canada
- 502Z⁶ Problems in Canadian Intellectual History
- 504Z⁶ The City in Canadian History
- 506Z⁶ Canada in the 1920's and 1930's.

IV Political Science § 51.20.3
- 320Z⁶ Canadian Government and Politics
- 373B³ Nationalism, The Canadian Experience
- 420Z⁶ Parties, Pressure Groups and Public Opinions
- 424Z⁶ An Introduction to Law and the Canadian Constitution
- 428Z⁶ Public Administration
- 520Z⁶ Seminar on Quebec Government and Politics
- 524Z⁶ Seminar on Canadian Federal, Provincial and Municipal Governments

V Geology (Geography) § 51.13.6
- 420Z⁶ Geography of Canada
- 460Z⁶ Geography of Northern Lands
- 473B³ Historical Geography of North America

VI Sociology § 51.22.3
- 302Z⁶ Canadian Society
- 304Z⁶ Quebec Society
- 410Z⁶ Social Movements in Quebec
- 427B³ Sociology of Labour and Capital in Quebec
- 504Z⁶ Sociology of Economic Change in Quebec

VII Economics § 51.9.3
- 338Z⁶ Contemporary Economic Issues
- 504Z⁶ Economic Development of Canada
- 540Z⁶ Economics of Social Welfare

VIII Theology § 51.23.3
- 569Z⁶ Canadian Church History

IX Fine Arts § 81
- 351B³ Canadian Theatre
- 431A³ Drama — Quebec Theatre
- N-444⁶ The Arts in Canada

X Communication Arts § 51.7.3
- 528Z⁶ Broadcasting Policy in Canada
- 445B³-10 The Canadian Cinema

XI Interdisciplinary Studies § 51.15.10
- 326Z⁶ Alienation — English and French Canadian Literature

Representatives

Communication Arts	M. Gervais
Economics	M. Islam
English	E. Cameron
Études Françaises	A. Lauzière
Fine Arts	G. Gross
Geography	M. Brookfield
History	M. Vipond
Political Science	E. Price
Sociology	D. Glenday
Theology	C. Paris

51.15.3 RECREATION AND LEISURE STUDIES

Co-ordinator:
A. WRIGHT

Recreation and leisure service is a basic social and cultural need, and is concerned with the interrelationships among people in their environment. A great deal of money is poured into recreation and leisure at all governmental levels, leading to a pressing need for people to administer and develop programmes at the necessary standards of sophistication.

This programme attempts to fulfill this need and is offered to those students interested in a career in recreation and leisure services together with those students who foresee the increasing academic enquiry into the problems derived from recreation and leisure within the work ethic.

The primary focus is on managing, programming, counselling and co-ordinating rather than instructing. The programme draws

from the departments of Bio-Physical Education, Etudes Françaises, Interdisciplinary Studies, Psychology, Sociology and the Faculty of Commerce and Administration.

Requirements:

Both required and elected courses within the Social Science and Applied Recreation options should be chosen in consultation with the coordinator.

Additionally it will be required that students must maintain a 65% average in all courses in the programme in order to continue into the second and third year of their studies.

Representatives:

A. Wright —Bio-Physical Education
L. Boyle —Commerce
M. Hogben —Interdisciplinary Studies
M. Shames —Psychology
C. Gray —Philosophy
A. Turowetz—Sociology

Upon completion of all the requirements the student will receive a BA with Specialization in Recreation and Leisure Studies (Interdisciplinary Studies).

51.15.4 RECREATION AND LEISURE STUDIES PROGRAMME

Outline of Programme

I Recreation and Leisure Foundation
(All Compulsory)

Bio-PE 341B[3]
Bio-PE 361Y[3]
Bio-PE 433B[3]
Bio-PE 441A[3]
Bio-PE 526Z[6]
Bio-PE 560Z[6]
Fr 309A/B[3]
Fr 311A/B[3]
Phil 372Z[6]
Inte 560Z[6]
Total: 42 credits

II Social Science Component
(Choose either A, B, or C)

A	**B**	**C**
Sociology	*Psychology-1*	*Psychology-2*
Soci 300Z[6]	Psyc 200Z[6] or 300Z[6]	Psyc 200Z[6] or 300Z[6]
400Z[6]		
500Z[6]	301B[3] 303A[3]	301B[3] 303A[3]
402Z[6]	302Z[6]	310Z[6]
One 404Z[6]	Two 304Z[6]	Two 313A[3]
From 406Z[6]	From 402Z[6]	From 315B[3]
502Z[6]	406Z[6]	414Z[6]
Total Credits 24	24	24

III Applied Recreation Component
(Choose X or Y)*

X Administration 24 credits from:	**Y** Recreation Programming 24 credits from:
Man 313[3]	Bio-PE 311A[3]
Man 315[3]	Bio-PE 313B[3]
Mark 213[3]	Bio-PE 410Z[6]
Mark 350[3]	Bio-PE 501B[3]
Acc 213[3]	Bio-PE 531B[3]
Acc 214[3]	Bio-PE 512Z[6]
Fin 215[3]	Bio-PE 470Z[6]
Fin 314[3]	
Econ 300Z[6]	
Total Credits 24	24

Note: Psychology 300 is a prerequisite for any Psychology 400-level course.

The social science component (C) is strongly recommended for students choosing the applied recreation component (Y).

**For course descriptions*
X refer to § 61 course descriptions
Y refer to § 51.4.3

51.15.5 SELF-ELECTED SPECIALIZATION PROGRAMME

Requirements leading to a Bachelor of Arts with a "self-elected" Specialization in . . . *"title of chosen specialization"* . . . (Interdisciplinary Studies)

Students may apply to pursue a Self-Elected Specialization by submitting in writing a statement of the proposed programme. There is no limitation on the subject matter of the proposal. The proposal should, however, contain the following information:

a) a title of proposed area of specialization
b) a personal statement of purpose in taking such a programme
c) a list of ten or more courses directly related to the title and totalling 60 credits over a three-year period.

This proposal should be submitted to the Director of Interdisciplinary Studies as early as possible before registration. It will then be examined by a committee of Faculty from the general area of the student's interest. Students submitting proposals less than a month before registration may be admitted by the Director on a holding basis but this implies no guarantee of any later acceptance of a programme.

The following guidelines should help a student in constructing a valid set of courses in the area of his specialization.

1. The title or theme of the proposed area of specialization must be interdisciplinary, i.e., it must contain a coherent perspective that cuts across at least three traditional disciplines.
2. A student must maintain a 70% average in those courses proposed in setting up the programme. Failure to meet this requirement will prohibit the student from entering the second and third years of study.
3. The programme must include at least four courses (24 credits) falling within a single discipline — hereafter called the foundation discipline. These courses must include some of the "core" courses towards a major in that discipline. This practice is not only sound pedagogy but has added significance in that a student failing to maintain a 70% average can then transfer to the department of the foundation discipline and still continue towards a major or Specialization in that field.
4. The final year, the student must enroll in Inte 550Z, (6 credits) the Self-Elected Specialization Tutorial.

51.15.6 MINOR IN MEDIEVAL STUDIES

Co-ordinator:
R. COOLIDGE
(History Department)

This Minor is designed to deepen the understanding of the Medieval world both of students who have already come into contact with the area in other departments, and also of those who have an interest in Medieval Studies even though their Major or Honours Programmes are unrelated. It is possible to register for this Minor as a way of grouping four electives in this specific area.

Requirements:

1. Selection of 18 credits dealing with the Medieval World from at least two departments other than that of the student's Honours or Major Programme. This selection will be made in close consultation with the Co-ordinator. Such courses may be selected from the following list:

For a complete course description see the appropriate section

Classics § *51.6.2*
436Z[6] Continuity and Change: An Intellectual History of the Late Roman Empire
492Z[6] Late Latin

English § *51.10.3*
409A[3] Chaucer
411B[3] Chaucer
410Z[6] Masterpieces of English Literature written before 1603
412Z[6] Medieval Literature
501A[3] Anglo-Saxon
503B[3] Middle English

Études Françaises §*51.12.3*
532Z[6] Literature du Moyen Age

Fine Arts § *81.7.2*
N-441[6] History of Medieval Art

History §*51.14.2*
330Z[6] History of Medieval Europe
430Z[6] Readings in Medieval History
530Z[6] Priesthood and Politics in the Middle Ages

Italian § *51.17.3*
440Z[6] Dante
500Z[6] Literature of the Middle Ages

Philosophy § *51.18.3*
400Z[6] Author Course (Medieval Authors Only)
420Z[6] History of Medieval Philosophy

Political Science § *51.20.3*
393B[3] Roman, Medieval, and Renaissance Philosophy

Spanish § *51.17.3*
500Z[6] Literature of the Middle Ages

2. Participation in Medieval Studies Seminar (Inte 520Z[6]) in third year.

Representatives:
R. Coolidge — History
R. Wareham — English
M. Dagg — English
M. Philmus — English
G. Laurion — Études Françaises
A. Costanzo — Modern Languages
E. Joos — Philosophy
S. Casey — Classics

After completion of all requirements the student will, on graduation, receive on his transcript "Minor in Medieval Studies (Interdisciplinary Studies)".

51.15.7 MINOR IN "SOCIAL RESPONSIBILITY IN SCIENCE"

Coordinator:
Dr. M. G. HOGBEN

In the past, scientists have thought of themselves as dispassionate observers of the outcome and effects of their experimentation. However, in the last three decades we have realized that scientists bear an increasing responsibility for answering not only the question "Can it be done?" but also "Should it be done?"

This Minor aims to co-ordinate social concern with science education. In choosing from this sequence of courses, it is to be hoped that science students will emerge with a stronger sense of direction and that non-science students will appreciate the scope of the crisis.

Requirements:

Selection of 24 credits or their equivalent from the following groups: (in close consultation with the co-ordinator)

For a complete course description see the appropriate section.

At least 6 credits from:
Philosophy § *51.18.3*
331Z[6] Philosophy of Social Science
Interdisciplinary Studies § *51.15.10*
370Z[6] Three Quarks for Muster Mark
364Z[6] Collision: Scientists Against the State
336Z[6] Technological Society

At least 6 credits from:
Interdisciplinary § *51.15.10*
330Z[6] Environmental Studies I
430Z[6] Environmental Studies II

Computer Science § *51.8.3*
301B[3] Computers in Society

Biology § *51.3.3*
331A[3] Environmental Biology
333B[3] Environmental Biology
434Z[6] Ecology

Chemistry § *51.5.3*
411B[3] Environmental Chemistry
541A[3] Nature and Analysis of Pollutants

Plus the integrating Interdisciplinary Studies course:
460Z[6] Science and Cultural Criris

After completion of all requirements the graduating student will receive on his transcript "Minor in "Social Responsibility in Science" (Interdisciplinary Studies)".

51.15.8 MINOR IN THIRD WORLD STUDIES

Co-ordinator:
M. MASON

The Third World Studies Programme

aims at encouraging and integrating interest in Asia, Africa and Latin America. Courses relating to these areas are offered in History, Political Science, Sociology, Geography, Economics and Interdisciplinary Studies at the Loyola Campus of Concordia.

Requirements:

Students enrolled in the programme will be required to take an introductory course, Interdisciplinary Studies 350Z[6], together with 18 credits selected from at least two of the disciplines listed below.

For a complete course description see the appropriate section.

Interdisciplinary Studies § *51.15.10*
350Z[6] An Introduction to the Third World
450Z[6] Third World Studies Seminar

Economics § *51.9.3*
307B[3] The Chinese Economy
401A[3] Theories of Economic Growth
403B[3] Planning for Economic Growth

Geology (Geography) § *51.13.6*
440Z[6] The Third World
450Z[6] The Geography of the Far East

History § *51.14.2*
372Z[6] History of Modern China
373A[3] History of Modern Japan
375B[3] History of Modern India
376Z[6] Introduction to the History of Africa
471A[3] Colonialism and Neo-Colonialism in Africa: Struggles for Liberation in Africa
570Z[6] East Asia Today
576Z[6] Imperialism and Revolution in the Third World

Political Science § *51.20.3*
441A[3] Contemporary Politics of China
443B[3] Contemporary Politics of Japan
450Z[6] African Government and Politics
455Z[6] Middle East in World Politics
457B[6] Mid-East Political Systems
480Z[6] Politics of Developing Areas

Sociology § *51.22.3*
421A[3] Sociology of Economic Development
560Z[6] Topical Seminar in Capitalism and Underdevelopment in Africa and Latin America

After completion of all requirements the student will, on graduation, receive on his transcript "Minor in Third World Studies (Interdisciplinary Studies)".

51.15.9 MINOR IN WOMEN'S STUDIES

Co-ordinator:
S. DRYSDALE

This programme consists of courses dealing with the status, participation and problems of women in Western culture. The courses include such concerns as women in the arts, literature, history, the family and society. The aims of the programme are to introduce the student to the study of women and to offer some background for those who will work in institutions and occupations concerned with women.

Requirements

The Minor consists of a selection of 18 credits offered in the programme in consultation with the coordinator. In addition, the Third-Year Interdisciplinary Seminar is required of all students. All courses are also open to students who are not taking the complete Minor.

For a complete course description see the appropriate section.

Interdisciplinary Studies § *51.15.10*
540Z[6] Seminar in Women's Studies
410Z[6] Women in Modern Society
320Z[6] Comparative Literature: Women in Nineteenth and Twentieth Century Literature

Classics § *51.6.2*
386Z[6] Women in Classical Antiquity

History § *51.14.2*
416Z[6] The History of Women (since 1800)

English § *51.10.2*
337A[3] Women and Literature.
337B[3] Women and Literature.

Sociology § *51.22.3*
506Z[6] Sociology of Women

Interdisciplinary Studies § *51.15.10*
540Z[6] Seminar in Women's Studies (Required)

Representatives:
S. Drysdale — Sociology
A. Furlong — Interdisciplinary Studies
L. Sanders — Classics
J. Stoddart — History
K. Waters — English

After completion of all requirements the students will, on graduation, receive on their transcripts "Minor in Women's Studies (Interdisciplinary Studies)".

51.15.10 COURSES IN INTERDISCIPLINARY STUDIES

INTERDISCIPLINARY STUDIES 101A
Basic Research Methods

A non-credit course offered by the Centre for Interdisciplinary Studies with the collaboration of the staff of the Vanier Library. The course is designed to introduce the student to the fundamentals of formulating a problem, finding the resources necessary to its research, and expressing his work in a logical and presentable form. Lectures: 2 hours per week for the first semester (no credits)

INTERDISCIPLINARY STUDIES 300Z
Mental Techniques

This course is concerned with the direct training of individual students in various mental techniques. The aim of the course is to foster the development of the student's level and quality of mental functioning. The mental functions dealt with range from the individual techniques. e.g. logic, through small group functions, e.g., predictive analysis, to large group functions, e.g., organization systems analysis. The means employed include lectures, texts, small work groups, tapes, problem-solving and several levels of games (which are played in special lab sessions). Lec-

tures: 5 hours per week for two terms. Labs: 3 hours per week for two terms. (10 credits)

INTERDISCIPLINARY STUDIES 304Z
Aesthetics: An Interdisciplinary Approach

This course attemps to bring together a number of areas central to the cultural climate of our time, with emphasis on aesthetics, that is; man's encounter with the creative arts. The course examines the relation of aesthetics generally (and art in particular) to the crisis in values, and to contemporary identity crisis. More specifically artistic questions such as the meanings and functions of style, taste and criticism; the questions of form and content, subjectivity and objectivity in art; and the comparison of different artistic media, are integrated with the broader issues remarked above. The course's format is lecture and discussion with the use of slides, recordings and films as illustrative material. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 306Z
(Also given as Art 326 § 81.6.3)
Sport in Art

Students will study works of art depicting sport in various periods and places. Works in several media representative of the culture of their origin will be selected, as well as documents treating the culture from anthropological, historical and sociological perspectives. The course will be conducted jointly by members of several departments as well as by invited speakers. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 320Z
Comparative Literature (6 credits)

INTERDISCIPLINARY STUDIES 324Z
(Also given as French 596Z § 51.12.3)
Litterature Comparee — Comparative Literature: Litteratures Canadiennes — Canadian Literatures

Etude comparée des littératures canadiennes d'expression française et d'expression anglaise. Existe-t-il une seule littérature canadienne dans les deux langues ou, en réalité y a-t-il deux littératures séparées au Canada? Comparative study of French and English Canadian Literature. Is there only one literature in two languages or has Canada produced two distinct and separate literatures? Lectures: 3 hours per week for two terms. Texts: Leonard Cohen, *Beautiful Losers* — Robertson Davies, *Heaven of Malice* — M. Lawrence, *Stone Angle* — Ringuet, *Trente Arpents* — Gabrielle Roy, *Bonheur D'Occasion* — Simard, *Mon Fils Pourtant Heureux* — Aquin, *Trou de Mémoire* — Roch Carrier, *La Guerre, Yes Sir* — Marie Claire Blais, *Une Saison Dans La Vie D'Emmanuel* — Grove, *Settlers of the Marsh* — Callaghan, *They Shall Inherit The Earth* — Hugh MacClennan, *The Watch That Ends The Night*. (6 credits)

INTERDISCIPLINARY STUDIES 326Z
Alienation — English and French Canadian Literature

The theme of "alienation" as it appears in English and French Canadian Literature will be explored through the poetry and fiction of both languages. The course will consist of lectures in English, lectures in French and joint seminars in which both professors and students will discuss the relationship between the two cultures. A minimal knowledge of both languages is required (many texts are translated). Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 330Z
Environmental Studies

The course is designed to provide a general background to the scientific and sociological study of man's relationship to his environment. Each lecture will attempt an in-depth treatment of a specific aspect of the environmental issue, and will be presented by an invited specialist in that field. The course will present an overall view of the general problems followed by a serious analysis of specific areas of concern, such as the pollution of water, air and soil; noise pollution; the oceans; energy resources and population. Possible solutions for the restoration and preservation of our environment will be discussed and the associated social, political and economic considerations will be presented. The general content of the lectures, where applicable, will be directed to problems in our city and province. The presentation of material will include lectures, discussion groups, films and panel discussions. Readings on the various topics will be assigned and students will be involved in projects and term papers. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 336Z
The Technological Society

The purpose of this course is to familiarize the student with the characteristics of contemporary society which specifically relate to the large-scale application of technology and to appreciate the historical uniqueness of these characteristics. The course will concentrate on four main areas:

1. *What is technology?* Science as technique. Organization as technique. Machines as technique. Social planning as technique. Technology and social change.
2. *Historical Studies* Agrarian Revolution, Medieval Technology and Feudalism, Industrial Revolution, Development of Economics.
3. *Comparative Studies* Technology under American capitalism and Soviet Communism, developed countries and "Third World" nations, national commitments to technological growth, multi-national corporations.
4. *Problems of Technology* Technological backlash (eg. pollution from industry), Doomsday theories, uncontrolled growth, alternative futures.

Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 350Z
An Introduction to the Third World

While this course is designed to provide an interdisciplinary background to students enrolled in the Third World Studies Programme, it is open to all students of Loyola, irrespective of faculty. Lectures: 3 hours a week for two terms. (6 credits)

INTERDISCIPLINARY 364Z
Collision: Scientists Against the State
Issues in Science and Politics

The advent of two scientific concepts, Evolution and Atomic Energy, will be examined in detail. The course will be divided into three parts: 1. The advent of Darwinian Theory 2. The New Physics from 1900 to the present 3. The Current Soviet Dissent.

The first two parts will comprise a history of the science and intellectual climate of the time, a study of the basic scientific principles, and a look at specific related topics. The third part will examine the domination over research and teaching in science by political systems. In particular, the current dissent of Soviet scientists, eg. Z. Medvedev and A. Sakharov will be investigated. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 370Z
"Three Quarks for Muster Mark"
A Dialogue Between Science and the Arts

A course for Science and arts students which will attempt to elucidate the inter-action between scientific and cultural developments throughout history and in the present day. Using works by various philosophers, scientists and creative writers, we will trace the continuing dialogue between science and the arts and its relevance for man's attitude toward himself and his world. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 382Z
Search for Identity: Personal and National

The aim of this course is an examination of the philosophical foundations of the present crisis of identity. Recent discoveries in psychology and psychiatry will be used as a basis for the development of a philosophical theory of identity and ■

programme for shaping identity. Special attention will be given to the issue of group identity and national identity, with particular reference to the context of Canada and Quebec.

Topics discussed include: the nature of the present crisis of identity; identity and personality; being and becoming of personality; identity and mental health; loss of retrieval of autonomy and authenticity; national identity and the challenge of nationalism; man in relation to his creative potential; his nation and the world community; Canadian identity; the role of Quebec in Canada and in positive transformation of civilization. Texts include readings from Allport, Bergson, Bergeron, Dabrowski, Erikson, Frankl, Fromm, Laing, Levesque, Marx, Maslow, Reves, Trudeau. Lectures: 3 hours a week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 400Z
(Also given as History 308Z § 51.14.2
Social Change: The Native Peoples of Canada

Examines the crisis of the native people of Canada from a multidisciplinary perspective. Participants will include not only the Loyola Community but Indian and White experts from throughout Canada, and a strong contingent of Indians from the Montreal area. The course attempts to set forth the magnitude of this crisis and ends by asking how the native peoples will be able to control their own lives and future. Guest speakers are invited from across Canada. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 410Z
Social Change: Women in Modern Society

An interdisciplinary course designed to explore the changing roles of women in contemporary society from the point of view of various disciplines. The specific discipline emphasized will vary from year to year depending upon the background of the instructor. Lectures and/or seminars: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 450Z
Third World Studies Seminar

Prerequisites: Open only to students in their second or third year or to post-graduate students. This seminar will deal with one or other of the special aspects of the Third World on a comparative basis. Examples of such might be the question of peasant revolts or of industrialization in peasant societies. Lectures: 3 hours a week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 460Z
Science and Cultural Crisis

This course will attempt to develop a framework for responding to problems posed by recent and projected achievements in the sciences, especially the life sciences. Our thesis is that scientific break-throughs have precipitated a crisis, or series of crises, with respect to man's self-understanding, his relations to his fellow man, and his relations with nature. Our aim will be to understand the historical and intellectual roots of these crises and to formulate responses which grow out of scientific-philosophic dialogue. Topics will include: Objectivity: scientific, philosophic; Alienation and the "two cultures"; DNA and being human; Death with dignity; Biogenetic engineering; the "right" to privacy; the difficulty of dialogue. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 511A
Canadian Studies Seminar

Prerequisite: Enrollment in Canadian Studies Programme. An interdisciplinary seminar in which professors from two of the following disciplines will discuss together some themes or problems central to Canadian life: Communication Arts, Economics, English, Etudes Françaises, bhistory, Political Science, Sociology, Geography, Fine Arts, Theological Studies. Lectures: 3 hours per week first term. (3 credits)

INTERDISCIPLINARY STUDIES 513B
Canadian Studies Seminar

Prerequisite: Enrollment in Canadian Studies Programme. Same format as Canadian Studies Seminar 511A, but involving two other disciplines from the same list. Lectures: 3 hours per week second term. (3 credits)

INTERDISCIPLINARY STUDIES 520Z
Medieval Studies Seminar

Prerequisites: two courses or 12 credits in different departments within the minor. The seminar will be designed to coordinate the student's work in the field of medieval studies, both within and outside their Major or Honours programmes, and to broaden their knowledge of the middle ages, with the cooperation of the various departments involved in the programme. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 540Z
Seminar in Women's Studies

Prerequisites: Open to all students in the final year of a minor in Women's Studies. This is a third-year interdisciplinary seminar on selected themes related to women in society, utilizing the perspectives of a number of academic disciplines. The emphasis is on independent study. Lectures: 3 hours per week for two terms. (6 credits)

INTERDISCIPLINARY STUDIES 550Z
Self-Elected Specialization Tutorial

Prerequisite: For self-elected specialization students in their final year. This tutorial is directed by a faculty member from a field of studies relevant to the student's programme. He will be chosen by the Director of the Centre for Interdisciplinary Studies in consultation with the student concerned. The tutorial Director will supervise an intensive reading programme and assist the student in the preparation of a paper. The tutorial is intended to bring together the various fields of knowledge included in the student's programme. (6 credits)

INTERDISCIPLINARY STUDIES 560Z
Recreation and Leisure Studies Seminar

Prerequisites: Enrollment in final year of Recreation and Leisure Studies Prooramme. This is a third year interdisciplinary seminar in which students can tie together all they have learned in the Recreation and Leisure Studies Programme. Additionally students will be set on a course of study that should continue after they graduate so that they can keep up with future developments in this area. Lectures: 3 hours per week for two terms or equivalent time in independent study. (6 credits)

The following courses are university level courses which were offered in the year indicated but did not appear in the official Calendar.

INTERDISCIPLINARY STUDIES
1970

Interdisciplinary Studies 300
Interdisciplinary Approaches (3 credits)

Interdisciplinary Studies 315
Medieval Thought (6 credits)

Interdisciplinary Studies 350
Theoretical Problems of the Interdisciplinary Approach (6 credits)

51.16 Department of Mathematics

Assistant Professor and Chairman
J. SORIC

Associate Professors
K. N. MAJUMDAR
A. J. PRILLO
T. N. SRIVASTAVA

Assistant Professors
M. BOBETIC
M. FAIERMAN
D. KACHROO
A. KEVICZKY
H. KIM
R. A. SMITH

51.16.1 PROGRAMMES

102 BSc or BA Honours in Mathematics

Year I
3 Math 321A/B or Math Elec[3]
18 Math 323A/B[3], 326Z[6], 334Z[6], 353A/B
3 Math Elec[3]
6 Elec
6 Elec

Year II
6 Math 340Z[6] or 402Z[6]
15 Math 426Z[6], 436Z[6], 451A/B[3]
3 Math Elec
6 Elec[6]
6 Elec[6]

Year III
9 Math 535A/B[3], 551A/B[3], 567A/B[3]
15 Math Elec[15]
6 Elec[6]

90 BSc or BA Specialization in Mathematics

Year I
3 Math 321A/B[3] or Math Elec
15 Math 323A/B[3], 334Z[6], 340Z[6]
3 Math Elec
9 Elec

Year II
18 Math 326Z[6], 353A/B[3], 402Z[6], 451A/B[3]
3 Math Elec
9 Elec

Year III
6 Math 436Z[6]
12 Math Elec
12 Elec

42 BSc or BA Major in Mathematics

The following courses, in an approved sequence, constitute a Major in Mathematics.
3 Math 321A/B[3] or Math Elec[3]
36 323A/B[3], 326Z[6], 334Z[6] 340Z[6], 353A/B[3], 402Z[6], 436Z[6]
3 Math Elec[3]

42 BSc or BA Major in Statistics (Mathematics)

The following courses, in an approved sequence, constitute a maior in Statistics.
3 Math 321A/B[3] or Math Elec[3]
27 323A/B[3], 305A/B[3], 334Z[6], 340Z[6], 353A/B[3], 402Z[6]
9 405A/B[3], 502Z[6]
3 Comp Sc 241A/B[3] or Math Elec[3]

24 Minor in Mathematics

24 Four courses approved by the Mathematics Department constitute a minor in Mathematics.

51.16.2 DEPARTMENT OF MATHEMATICS

A "Mathematics elective" may be replaced by a course approved by the department.

Students who intend to follow a Mathematics Programme in University are recommended to take Mathematics 133, 135, 231, 233 (Loyola) or Mathematics 103, 203, 105 (CEGEP) at the collegial level.

A student wishing to follow a Mathematics Programme but not meeting these requirements should consult with the Department Chairman.

Students who have taken Mathematics 321 (Introductory Linear Algebra) or its equivalent at the collegial level, will have a Mathematics elective (half course) in its place. Students without a collegial half course in Linear Algebra take Mathematics 321 in University I.

By a careful choice of electives students can select whether the emphasis of the programme will be in the area of pure mathematics, applied mathematics or statistics.

The Mathematics Department offers the following courses, Mathematics 109A/B, 111A/B, 133A/B, 135A/B, 231A/B, 233A/B, as University credits for non-Science students (excluding Arts students who are following a Mathematics Programme) subject to the approval of each student's Departmental Chairman.

It is possible for a student to take the courses listed in the Honours and Specialization programmes in a sequence different from the one suggested, after obtaining the approval of the Department Chairman.

51.16.3 COURSE DESCRIPTIONS

MATHEMATICS 103
Mathematics for Elementary School Teachers

A comprehensive course in Mathematics designed for teachers of elementary grades who are responsible for developing ideas of Mathematics with children and for parents interested in the basic concepts and philosophy of the New Mathematics. The course will be a laboratory approach to mathematics content relevant to the elementary grades. Included will be elementary topics from sets, numeration, number operations and properties, geometry and number systems. The development of content will be combined with pedagogical implications through relevant applications to the classroom. This will be accomplished through discussion of learning theories, teaching strategies, consideration of and development of various materials of instruction, and evaluative procedures. In general the course will be experimental with participants "doing" as well as "discussing". A wide variety of instructional materials will be utilized and course activity, will be oriented toward an awareness of those materials available and their potential for the classroom. (9 credits)

NOTE: The course may be used as 9 credits at the University level except for Mathematics students.

MATHEMATICS 107
Mathematics for Secondary School Teachers

A comprehensive course in Mathematics designed for teachers of secondary school students. The course will be a laboratory approach to the teaching of mathematics with special emphasis upon the following topics: individualized instruction, teaching the slow learner, the use of media and instructional materials, project oriented instruction and evaluation. The development of various materials for instruction will be accomplished by the participant of the class and sources of supplementary materials will be made available. A wide variety of instructional materials will be utilized and course activity will be oriented towards an awareness of the materials which are potentially available for use in the classroom. (9 credits)

NOTE: The course may be used as 9 credits at the University level except for Mathematics students.

MATHEMATICS 109A/B
Intermediate Algebra

Numbers, sets, functions, the real number system, equations, inequalities, system of linear relations, matrices and determinants, mathematical induction, the binomial theorem and sequences, counting and probability. (3 credits)

NOTE: Mathematics 109 & 111 were formerly called mathematics 101Z

MATHEMATICS 111A/B
Trigonometry and Analytic Geometry

Exponential and logarithmic functions, circular and trigonometric functions; numerical trigonometry; trigonometric analysis. Straight line, circles, parabolas, ellipses and hyperbolas. (3 credits)

NOTE: Mathematics 109 & 111 were formerly called Mathematics 101Z.

MATHEMATICS 133A/B
Calculus I

Prerequisite: Functions 521 or 531; or Math. 109A/B & 111A/B (101Z). Equation of straight line; function notation; limits; slope of a curve; derivative; differentiation formulas — chain rule; implicit differentiation. Applications, curve sketching, related rates, theory of extrema; antiderivative, area under a curve. (3 credits.)

MATHEMATICS 135A/B
Calculus II

Prerequisite: Mathematics 133A/B. Applications of integration; derivative and integral of trigonometric, exponential and logarithmic functions; methods of integration. (3 credits.)

MATHEMATICS 231A/B
Calculus & Vector Geometry

Prerequisite: Mathematics 133A/B & 135A/B. Review of introductory calculus, translation and rotation of axes. Polar coordinates. Methods of integration. Vectors in the plane, vectors and parametric equations, differentiation of vectors, vectors and solid analytic geometry, equations of lines in space, scalar product, equations of planes, surfaces. (3 credits.)

MATHEMATICS 233A/B
Calculus

Prerequisite: Mathematics 231A/B. L'Hôpital's rule and improper integrals. Infinite series, geometric series, tests for convergence, alternating series, power series, Taylor's Theorem with remainder, functions of several variables, partial derivatives, selected topics. (3 credits.)

MATHEMATICS 300Z
Ideas in Mathematics

Prerequisite: For non-science students. The course endeavours to reveal the extent and power of mathematics and to give some insight into its historical development. The topics chosen will be presented in a way that requires a minimal mathematics background. This course has no formal prerequisites and does not serve as a prerequisite for any other course in mathematics. Students should consult with the professor before registering for this course. (6 credits)

MATHEMATICS 301A/B
Elementary Statistics

Empirical frequency distributions and descriptive measures; elementary proability; populations, samples, and theoretical distributions; sampling distributions; estimation of confidence intervals; tests of hypotheses; two sample techniques; tests for goodness of fit; regression and correlation; analysis of variance. (3 credits.)

NOTE: Not for Mathematics students or for students taking an equivalent course in another department.

MATHEMATICS 303A/B
Probability for Engineers

Probability theory; special distributions; binomial, Poisson, Normal, Gamma and Beta distributions. Sampling distributions. (3 credits.)

MATHEMATICS 305A/B
Introduction to Discrete Probability Theory

Prerequisite: Mathematics 231 & 233 or Mathematics 103, 203 (CEGEP). Probability models, Random variables. Combinatoric problems. Conditional probability and independence. Generating functions. Some discrete distributions. Expectation and variance of random variables. Introduction to Markov chains and queues. (3 credits)

MATHEMATICS 310Z
Mathematics for the Social And Management Sciences
Prerequisite: Mathematics 109A/B, 111A/B (Math 101Z) or Functions. For non-science students. Functions and graphs, systems of linear equations, matrices, linear programming, probability, the derivative, applications of the derivative, exponential and logarithmic functions, integration. (6 credits)

MATHEMATICS 312Z
Differential Equations (Engineering)
Prerequisite: Mathematics 231A/B, 233A/B OR 103, 203 (CEGEP). Special methods for first order ordinary differential equations. Application of first order equations. Linear differential equations with constant coefficients. Applications of second order linear differential equations. Power series solutions. Systems of linear equations. The Laplace Transform. Non-linear differential equations. Boundary value problems. (6 credits)

MATHEMATICS 315A/B
Engineering Mathematics
Prerequisite: Mathematics 231A/B, 233A/B or Math 103, 203 (CEGEP). Fourier series. Laplace Transform. Gamma, Beta, Legendre and Bessel functions. Jacobians. Transformations in multiple integrals. Introduction to partial differential equations. (3 credits)

MATHEMATICS 317A/B
Mathematics for Engineers & Physicists
Prerequisite: Mathematics 231A/B, 233A/B or Mathematics 103, 203, (CEGEP). Vector analysis. Line and surface integrals. Divergence and Stokes' theorems. Complex analysis; analytic functions. Cauchy theorem. Cauchy's integral formula. Taylor and Laurent expansions. Cauchy Residue theorem. Contour integration. Simple transformations. (3 credits)

MATHEMATICS 321A/B
Introduction to Linear Algebra
Systems of equations. Vector spaces. Linear transformations, matrices. Determinants. (3 credits)

MATHEMATICS 323A/B
Linear Algebra
Prerequisite: Mathematics 321A/B or its equivalent. Vector spaces, bases, dimension. Linear mappings. Matrices and linear operators, eigenvalues and eigenvectors. Canonical forms. Inner product spaces. (3 credits)

MATHEMATICS 326Z
Algebra I
Theory of groups, subgroups, first Sylow theorem and normal subgroups. Commutator subgroups. Permutation groups, generated subgroups. Quotient groups and Lagrange's theorem. Homomorphisms, p-groups and the class formula. Elementary properties of rings, integral domains and fields. Ideals and quotient rings. Examples of non-commutative rings. Ring homomorphisms. Polynomial rings and factorization. Field of quotients and other selected topics. (6 credits)

MATHEMATICS 329A/B
Mathematics of Investment
Prerequisite: Mathematics 109A/B & 111A/B (101Z) or Functions. Theory of interest; annuities certain; amortization and sinking funds; evaluation of bonds and other investments; depreciation, depletion and capital cost. Brief introduction to life insurance. (3 credits)

MATHEMATICS 332Z
Advanced Calculus
Prerequisite: Mathematics 231 & 233 or Mathematics 103, 203 (CEGEP). For Chemistry students only. Differential equations; limits and continuity; multiple integrals; Green's, Stokes', Gauss' Theorems; series; improper integrals and Laplace transform. (6 credits)

MATHEMATICS 334Z
Advanced Calculus
Prerequisite: Mathematics 231 & 233 or Mathematics 103, 203 (CEGEP). Functions of several variables, limits, continuity, partial derivatives, maxima and minima, extremal problems with constraints, differentiability, Taylor's series, double and triple integrals, curves and surfaces, line and surface integrals, Green's theorem and Stokes' theorem. (6 credits)

MATHEMATICS 340Z
Numerical Methods
Prerequisite: Mathematics 231 & 233 or Mathematics 103, 203 (CEGEP). The course is designed to acquaint the student with standard numerical methods and their mathematical foundations. Evaluation of polynomials and their derivatives. Linear approximations. Zeros of functions. Basic sets of polynomials. Polynomial approximations. Numerical differentiation and integration. Gaussian quadrature. Method of undetermined coefficients. Ordinary differential equations. Systems of linear algebraic equations. Matrix inversion. (6 credits)

MATHEMATICS 353A/B
Ordinary Differential Equations I
Prerequisite: Mathematics 231 & 233 or Mathematics 103, 203 (CEGEP), & Mathematics 321 or its equivalent. First order differential equations. Linear differential equations with constant and variable coefficients. Sturm-Liouville problems. Green's function. (3 credits)

MATHEMATICS 368Z
Actuarial Mathematics
Prerequisite: Mathematics 329A/B. The measure of mortality. life annunities, life insurance, net annual premiums, net level premium reserves. The expense factor, special topics, population theory. (6 credits)

MATHEMATICS 371A/B
Introduction to Logic
Logic and Language. Propositional calculus. Validity and invalidity. Formal proofs. Propositional functions and quantifiers. Predicate calculus. Metamathematics. (3 credits)

MATHEMATICS 373A/B
Set Theory
Elementary properties of sets, relations, and functions. Equivalence relations. Axiom of choice and equivalent conditions. Ordinal and cardinal numbers. (3 credits)

MATHEMATICS 375A/B
Introduction to Combinatorial Mathematics
Elementary Graph Theory. Permutations and combinations. Principle of exclusion and inclusion and its applications; various combinatorial problems, recurrence relations. (3 credits)

MATHEMATICS 377A/B
Introduction to Game Theory
Matrix games. Strategies. Optimum strategies and the value of a game. Strictly determined games. Non-strictly determined games and linear programming. Applications. Further material according to interest of instructor and students. (3 credits)

MATHEMATICS 402Z
Mathematical Statistics
Prerequisite: Mathematics 231 or 233 or Mathematics 103, 203 (CEGEP). Frequency distribution. Averages and measures of dispersion, coding method to compute averages and measures of dispersion. Introduction to probability theory. Random variables and mathematical expectation. Moments, factorial moments and moment generating functions. Discrete and continuous distributions (Bernoulli, binomial, Poisson, geometric, negative binomial, hypergeometric, gamma, beta and normal distributions). Distribution of sample statistics, estimation and small sampling theory (t-test, X^2-test, F-test). Testing of hypotheses. (6 credits)

MATHEMATICS 405A/B
Stochastic Processes

Prerequisite: Mathematics 305A/B. Continuous time stochastic processes. Poisson processes. Continuous time Markov processes. Queuing models. Birth and death processes, renewal theory and reliability of systems. Selected topics. (3 credits)

MATHEMATICS 415A/B
Boolean Algebra

The algebra of sets, Boolean algebra, symbolic logic and propositional algebra, switching algebra and other topics to suit the class. (3 credits)

MATHEMATICS 426Z
Algebra II

Prerequisite: Mathematics 326Z, Advanced topics in group theory including Sylow theorems. Fundamental theorem of finitely generated abelian groups, composition series. Galois' theorem for permutation groups. Introduction to field theory; normal and separable extension, Galois theory and unsolvability of the Quintic. (6 credits)

MATHEMATICS 436Z
Real Analysis

Prerequisite: Mathematics 334Z. The real number system, Dedekind cuts, metric spaces, sequences, series convergence tests, limits of functions, continuity, the Bolzano-Weierstrass theorem, derivatives, Taylor's theorem, functions of bounded variation, Riemann-Stieltjes integral, sequences and series of functions, uniform convergence. (6 credits)

MATHEMATICS 451A/B
Complex Analysis

Prerequisite: Mathematics 334Z. Roots of a complex number. Functions, limits and continuity. Branch points; analytic functions; Cauchy-Riemann equations; singular points; complex integration; Green's formula, Liouville theorem. Taylor's and Laurent's theorem. Theory of Residues. Evaluation of integrals. Selected topics. (3 credits)

MATHEMATICS 471A/B
Projective Geometry

Prerequisite: Mathematics 326Z & Mathematics 321 or its equivalent. Basic definitions and results; collineation; affine planes; perspectivities; Desargues and Pappus postulates and Hessenburg's theorem. Incidence matrices of finite projective planes and orthogonal Latin squares. Coordinates in projective planes; examples of non-Desarguesian projective planes. (3 credits)

MATHEMATICS 473A/B
Ordinary Differential Equations II

Prerequisite: Mathematics 353A/B. Linear differential equations with analytic coefficients. Frobenius method for linear differential equations at a regular singular point; Laplace transforms. Existence and uniqueness theorems. (3 credits)

MATHEMATICS 502Z
Experimental Statistics

Prerequisite: Mathematics 402Z, Curve fitting. Regression and correlation (multiple and partial). Basic concepts of sampling; simple, stratified, systematic and cluster sampling, optimum allocations. Ratio estimates. Matrix derivatives. Sum of random variables. Multivariate normal distributions, linear models. Design models. Analysis of variance techniques. Design of experiments. One-way, two-way and multi-way classification (with or without interaction). (6 credits)

MATHEMATICS 526Z
Algebra III

Prerequisite: Mathematics 426Z. Rings and modules, structure of groups, lattices, categories and functors and multi-linear algebra. (6 credits)

MATHEMATICS 535A/B
Measure Theory and Integration

Prerequisite: Mathematics 436Z. The Lebesque integral and the classical problems it lays to rest. An exploration of more general theories of measure and integration in view of their mathematical clarifications or their applications. Topics covered include measure, outer measure, measurable sets, non-measurable sets, Lebesque integration, convergence, differentiation. (3 credits)

MATHEMATICS 540Z
Numerical Analysis

Prerequisite: Mathematics 340Z or special permission of the professor. Polynomial approximation. Interpolation; numerical differentiation; quadrature and summation; numerical solution of ordinary differential equations. Functional approximations. Least square techniques. Solutions of non-linear equations. Solutions of simultaneous linear equations, calculation of Eigenvalues and Eigenvectors of matrices. (6 credits)

MATHEMATICS 551A/B
Complex Analysis II

Prerequisite: Mathematics 451B. Analytic continuation. Maximum modulus theorem and its application. Argument principle. Rouche's theorem. Conformal mapping. Entire functions. (3 credits)

MATHEMATICS 567A/B
Topology

Prerequisite: Mathematics 436Z. Topological spaces, neighbourhoods, subspaces, continuous functions, compactness, connectedness, separation axioms, approximation. (3 credits)

MATHEMATICS 571A/B
Algebraic Topology

Prerequisite: Mathematics 326Z & 567A/B. Homotopy theory. Fundamental groups, classification and polygon representation of the topological surfaces. Orientability. Handles and cross caps. Triangulation, simplexes, chains and normal forms. Homology theory. (3 credits)

MATHEMATICS 575A/B
Senior Thesis

Prerequisite: Approval of the Department Chairman. Under special circumstances, approval will be given to undertake a research problem requiring independent work. The results will be directed and evaluated by a member of the department. (3 credits)

MATHEMATICS 577A/B
Functional Analysis

Prerequisite: Mathematics 567A/B. A short review of some of the algebraic concepts, Banach space; definitions and examples, continuous linear transformations. Hahn-Banach theorem. The natural embedding of N into N**. Hilbert spaces: definitions and examples. Orthonormal sets the conjugate space H*. The adjoint of an operator. Self adjoint operators. Normal and unitary operators. Projections. Finite dimensional spectral theory. (3 credits)

MATHEMATICS 579A/B
Calculus of Variations

Prerequisite: Mathematics 334Z, Euler-Lagrange equation. Legendre and Jacobi conditions, the E-function; Hilbert's invariant integral. Hamilton-Jacobi theory. Introduction to optimal control problems. Introduction to direct methods and partial differential equations. (3 credits)

MATHEMATICS 581A/B
Number Theory

Arithmetical functions d(n), o(n), $\phi(n)$ and their formulas. Mersenne numbers, perfect numbers. Congruences; Fermat theorem. Euler-Fermat theorem; Wilson's theorem. Divisibility properties of products of consecutive integers. Linear and quadratic congruences. Law of quadratic reciprocity. Mobius functions. Mobius inversion formula. Gauss theorem on $\phi(n)$. Gauss

theorem on primitive roots. (3 credits)

MATHEMATICS 592Z
(Also given as Physics 311B and 411A § 51.20.3)
Mechanics

Prerequisite: Six Physics credits and Twelve credits in Calculus. Review of vector calculus. Kinematics of particle motion. Moving coordinate systems. One dimensional motion. Introduction to Lagrange's and Hamilton's equations of motion. Conservative motion with emphasis on central forces. Systems of particles rigid bodies. Emphasis will be on illustrating the method of attacking physical problems and the mathematical tools used in solving them. (6 credits)

MATHEMATICS 594Z
Methods of Mathematical Physics II

Prerequisite: Mathematics 321A/B, 323A/B, 334Z, 353A/B. General concepts of analysis. Partial differential equations of Physics. Function spaces and orthogonal sets. Sturm-Liouville problem. Fournier series and Fournier integral. Special functions: Legendre, Bessel. (6 credits)

51.17 Department of Modern Languages and Linguistics

Associate Professor and Chairman
H. FAMIRA
Professor
C. FONDA
Associate Professor
F. ANTOLIN

Assistant Professors
A. COSTANZO
C. DI MICHELE
H. SCHEER

51.17.1 PROGRAMMES

60	BA Honours in Modern Languages and Linguistics
54	Germ or Ital or Ling or Span
6	Ling
	*Every Honours student must take 6 credits in Linguistics within his Programme, except, of course, students in the Linguistics Honours Programme.

42	BA Major in Modern Languages and Linguistics
42	Germ or Ital or Ling or Span

30	Minor in Modern Languages and Linguistics
30	Germ or Ital or Ling or Span or Russ

51.17.2 DEPARTMENT OF MODERN LANGUAGES AND LINGUISTICS

For any combinations of programmes, students may consult the Chairman of the Department. All courses numbered 400 and higher are of a similar academic level.

Students who want to take a Minor in Russian must consult the Chairman of the Department. The Department of Modern Languages and Linguistics will offer German 302S, Italian 300S and Spanish 300S in the *second semester* for *six credits*. Lectures will be for six hours per week including one hour in the language laboratory. Please see the appropriate language section for a description of these courses.

All courses taught in the Department of Modern Languages and Linguistics are taught so that a student, with the permission of the Department, may enroll in the second semester for three credits.

51.17.3 COURSES IN MODERN LANGUAGES

GERMAN

Qualified students may, with the permission of the Department, enter any six-credit German course, i.e. any "Z" course, at the beginning of the second semester. Upon successful completion, three credits will be awarded.

GERMAN 300Z
Introduction to German Studies

A comprehensive and thorough introductory course for the student with little or no formal knowledge of German. May be taken concurrently with German 302Z. Students who have already taken German 302Z may not take German 300Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

GERMAN 302Z
Elementary German

An introductory language course which develops all basic skills. For students with no knowledge of German. Emphasis on the audio-visual and audio-lingual approach. May be taken concurrently with German 300Z. Students who have already taken German 300Z may not take German 302Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

GERMAN 302S
Elementary German

Offered during *second semester*, this course is identical in content with German 302Z. Lectures: 6 hours, including 1 hour in the language lab per week for one term. (6 credits)

GERMAN 306Z
Reading German & Introduction to Translation

Prerequisite: German 300Z or 302Z or equivalent. Grammatical review. Introduction to translation from German to English. May be taken concurrently with German 308Z. Students who have already taken German 308Z may not take German 306Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

GERMAN 308Z
Intermediate German

Prerequisite: German 300Z or 302Z or equi-

valent. Advanced German grammar. Conversation and writing of compositions in German. Readings from German authors and other texts. May be taken concurrently with German 306Z. Students who have already taken German 306Z may not take German 308Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

GERMAN 370Z
Advanced Composition and Stylistics

Prerequisite: German 306Z or 308Z or equivalent. Introduction to comparative stylistics. Vocabulary expansion by word formation and derivation; selected grammatical problems. Analysis of literary and journalistic texts. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 376Z
German Translation

Prerequisite: German 306Z or permission of the Department. This course is a continuation of German 306Z and presents more complicated problems of translation from German into English. It is also an introduction to the basic skills of translating English into German. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 410Z
German Literature of the 19th Century.

A study of representative works of Buchner, Grillparzer, Gotthelf, Hebbel, Stifter, Keller, Fontane, and Hauptmann. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 420Z
Survey of German Literature 800-1750

A chronological consideration of the main currents of German literature from its beginning to 1750. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 480Z
Introduction to the German "Novelle"

The "Novelle" as an example of highly sophisticated formal achievement in German literature. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 530Z
The Rise of 20th Century German Literature

Prerequisite: German 306Z or 308Z or equivalent. A study of Naturalism, Expressionism and other literary trends in Germany between 1880 and 1933. Readings from works of representative authors from Hauptmann to Brecht. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 540Z
Classicism in German Literature

Prerequisite: German 306Z or 308Z or equivalent. The preclassic and classic period of German literature with its philosophical background. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 560Z
Literature of the Romantic Period

Romanticism as a universal attitude. Writings of the major romantic authors, their theories and realisations. Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 570Z
Contemporary German Literature

A study of literary trends in Germany since 1933. Literature in Hitler-Germany, German Emigrant literature, the literature in East-Germany, revaluation of German thinking in West Germany after 1945. (Mann, Hesse, Durrenmatt, Frisch, Grass, Brecht, et al). Lectures: 3 hours per week for two terms. (6 credits)

GERMAN 586Z
Tutorial

Prerequisite: Permission of the Department is required for enrollment in this course. A course designed to meet the individual needs of advanced students. Guided readings in German literature under the supervision of the Department. Written and oral criticism of the works studied. (6 credits).

GERMAN 364Z
Also given as History 364Z § 51.14.2

Germany and Austria in Modern Times. Course description see § 51.15.2 May be taken, with the permission of the Department, by German Majors or German Honours students as part of their requirements. (6 credits)

ITALIAN

Qualified students may, with the permission of the Department, enter any six-credit Italian course, i.e. any "Z" course, at the beginning of the second semester. Upon successful completion, three credits will be awarded.

ITALIAN 300Z
Introduction to Italian Studies

A comprehensive and thorough language course for the student with little or no formal knowledge of Italian. May be taken concurrently with Italian 302Z. Students who have already taken Italian 302Z may not take Italian 300Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

ITALIAN 302Z
Elementary Italian

An introductory language course which develops all basic skills. For students with no knowledge of Italian. Emphasis on the audio-visual and audio-lingual approach. May be taken concurrently with Italian 300Z Students who have already taken Italian 300Z may not take Italian 302Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

ITALIAN 306Z
Reading Italian and Introduction to Translation

Prerequisite: Italian 300Z or 302Z or equivalent. Grammatical review. Introduction to translation in Italian. Readings and translations of various texts. May be taken concurrently with Italian 308Z. Students who have already taken Italian 308Z may not take Italian 306Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

ITALIAN 308Z
Intermediate Italian

Prerequisite: Italian 300Z or 302Z or equivalent. Advanced Italian grammar. Conversation and writing of compositions in Italian. Readings from Italian authors and other texts. May be taken concurrently with Italian 306Z. Students who have already taken Italian 306Z may not take Italian 308Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

ITALIAN 316Z
Italian Civilization

Prerequisite: Italian 306Z or 308Z or equivalent. Cultural and scientific achievements. Economic, political, social and linguistic problems of contemporary Italy. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 320Z
Survey of Italian Literature

Prerequisite: Italian 306Z or 308Z or equivalent. A history of Italian literature from the Middle Ages to the present. Emphasis on the major writers of Italy. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 370Z
Advanced Composition and Stylistics

Prerequisite: Italian 306Z or 308Z or equivalent. Creative writing. Stylistic theories and analysis of literary styles. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 376Z
Italian Translation

Prerequisite: Italian 306Z or permission of the Department. This course is a continuation of Italian 306Z and presents more complicated problems of translation from Italian into English. It is also an introduction to the basic skills of trans-

lating from English into Italian. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 400Z
Literature of the 17th and 18th Centuries

A study of the principal literary trends of the 17th and 18th Centuries. Emphasis on Marino, Metastasio, Vico, Parini, Goldoni, Alfieri. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 410Z
Literature of the 19th Century

A study of the principal literary trends of the 19th Century. Emphasis on Foscolo, Leopardi, Manzoni, Carducci, Pascoli, Verga, and D'Annunzio. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 420Z
Literature of the 20th Century

Evolution of Italian literature since 1900. A study of representative works of poetry, drama and the novel. Emphasis on Pirandello, Ungaretti, Montale, Quasimodo, Silone, Pavese and Moravia. (6 credits)

ITALIAN 440Z
Dante

A study of Dante's life, background and works. Reading and analysis of the *Divina Commedia*. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 470Z
The Italian Theatre

Prerequisite: Permission of the Department. Evolution of the Italian Theatre from the origin to the present. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 500Z
Literature of the Middle Ages

Prerequisite: Italian 306Z or 308Z or equivalent. Origin and development of Italian literature from the Sicilian School, the "*Dolce Stil Novo*", through Petrarch and Boccaccio. Emphasis on the "*Canzoniere*" and the "*Decameron*". Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 510Z
Literature of the 15th Century

The rise of humanism in Italy. A study of representative works of the fifteenth century. Emphasis on Pulci, Boiardo, Lorenzo de Medici, Poliziano Leonardo da Vinci and Sannazaro. Lectures: 3 hours per week for two terms. (6 credits).

ITALIAN 520Z
Literature of the 16th Century

Study of the Renaissance in Italy. Emphasis on Machiavelli, Ariosto, Tasso. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 570Z
Italian Literary Criticism

A study of the main trends of Italian literary criticism from the origin to the present. Lectures: 3 hours per week for two terms. (6 credits)

ITALIAN 586Z
Tutorial

Prerequisite: Permission of the Department is required for enrolment in this course. A course designed to meet the individual needs of advanced students. Guided readings in Italian literature under the supervision of the Department. Written and oral criticism of the works studied. (6 credits)

RUSSIAN

RUSSIAN 300Z
Elementary Russian

An elementary course in reading, writing and grammar for students with little or no knowledge of Russian. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

RUSSIAN 308Z
Intermediate Russian

Prerequisite: Russian 300Z or equivalent. Review of and practice in Russian grammar, composition, reading and conversation with some material from modern Russian writers. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

SPANISH

Qualified students may, with the permission of the Department, enter any six-credit Spanish course, i.e. any "Z" course, at the beginning of the second semester. Upon successful completion, three credits will be awarded.

SPANISH 300Z
Introduction to Spanish Studies

A comprehensive and thorough language course for the students with little or no formal knowledge of Spanish. May be taken concurrently with Spanish 302Z. Students who have already taken Spanish 302Z may not take Spanish 300Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

SPANISH 302Z
Elementary Spanish

An audio-visual course for students with no knowledge of Spanish. This course is designed for developing conversational skills. May be taken concurrently with Spanish 300Z. Students who have already taken Spanish 300Z may not take Spanish 302Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

SPANISH 306Z
Idiomatic Spanish and Introduction to Translation

Prerequisite: Spanish 300Z or 302Z or equivalent. Grammatical review. Introduction to translation in Spanish. Contemporary readings of literary, commercial and journalistic texts. May be taken concurrently with Spanish 308Z. Students who have already taken Spanish 308Z may not take Spanish 306Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

SPANISH 308Z
Intermediate Spanish

Prerequisite: Spanish 300Z or 302Z or equivalent. Review of Spanish grammar. Composition and oral practice with special stress on conversation by means of audio-visual practice. Introduction to literary texts illustrating Spanish and Spanish-American culture as well as life. May be taken concurrently with Spanish 306Z. Students who have already taken Spanish 306Z may not take Spanish 308Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms. (6 credits)

SPANISH 316Z
Spanish and Spanish-American Civilization

Prerequisite: Spanish 306Z or 308Z or equivalent. The making of Spanish civilization, important aspects of Latin-American culture before and after Columbus' time. Economic, political and social problems of contemporary Spain and Spanish America. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 370Z
Advanced Composition and Stylistics

Creative composition and comparative stylistics. Analysis of selected Spanish and Spanish-American short-stories. A course designed to give the student practical experience in the use of the spoken and written language as well as clear criteria on stylistics. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 376Z
Spanish Translation

Prerequisite: Spanish 306Z or permission of the Department. This course is a continuation of Spanish 306Z and presents more complicated problems of translation from Spanish into English. It is also an introduction to the basic skills of

translating from English to Spanish. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 400Z
Survey of Spanish Literature
Analysis of the most outstanding masterpieces from the Renaissance till the 20th Century with special emphasis on the cavalry, picaresque and realistic novels. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 410Z
Spanish Literature of the 18th and 19th Centuries
Prerequisite: Spanish 306Z or 308Z or equivalent. Study of the principal authors and works of the Enlightment. The emergence of Romanticism in Spain as reflected in the most representative poets, dramatists and novelists. The Realistic novel in Spain. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 420Z
Spanish Literature of the 20th Century
Introduction: Generation of 1898; The Second Generation: Ortega; The Third Generation: Lorca; the poetic world of J. R. Jimenez; some aspects of the poetry, drama and novels after the Spanish Civil War. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 450Z
Spanish-American Literature to the 19th Century
Prerequisite: Spanish 306Z or 308Z or equivalent. Precolombian literature. The writers of colonial and independence periods. Spanish-American Romanticism. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 470Z
Spanish Theatre
Prerequisite: Permission of the Department is required for enrolment in this course. Evolution of the Spanish theatre. Study of some classic outstanding plays. Stress on oral practice and performance of a play. Lectures: 3 hours per week for two terms and performance of one play. (6 credits)

SPANISH 500Z
Literature of the Middle Ages
Prerequisite: Spanish 370Z or 376Z or equivalent. Study of Spanish literary works from 1140 until 1500. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 510Z
Literature of the Golden Age
Poetry, drama and the novel of the sixteenth and seventeenth centuries. Special emphasis on Don Quijote of Cervantes. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 530Z
Generation of 1898
A study of the principal writers of this generation: Unamuno, Baroja, Valle-Inclán, Machado, Azorin, Maeztu, etc. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 550Z
Spanish-American Literature of the 20th Century
The literary trends in Spanish-America from the Modernism till present day. Readings and analysis of novels, poetry and drama of the most outstanding writers of the Century. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 560Z
Spanish and Spanish-American Short-Story
A seminar on the short-story in Spain and mainly in South-America. Authors to be studied include: Cela, Matute (Spain); Darío (Nicaragua); Quiroga (Uruguay); Borges, Cortazar (Argentina); Rulfo (Mexico); Márquez (Colombia); among many others. Lectures: 3 hours per week for two terms. (6 credits)

SPANISH 586Z
Tutorial
Prerequisite: Permission of the Department is required for enrolment in this course. A course designed to meet individual needs of advanced students. Guided readings in Spanish and/or Spanish-American literature under the supervision of the Department. Written and oral criticism of the works studied. (6 credits).

51.17.4 LINGUISTICS

Major: A Major in Linguistics consists of 42 credits in Linguistics. A maximum of 12 of these credits may be taken from the courses listed below.
Honours: An Honours degree in Linguistics consists of 60 credits in Linguistics. A student must take at least 6, but is not permitted to take more than 18 credits from the course listed below.

For a full course description see section indicated:

Classics: § *51.6.2*
360Z Elementary Hebrew
450Z
350Z Elementary and/or Intermediate Greek
390Z Elementary and/or Intermediate Latin
434Z Archaeology/Introduction

French: § *51.12.3*
428Z Histoire de la langue et linguistique

Modern Languages and Linguistics: §51.17.3
Elementary and/or Intermediate
German
Italian
Russian
Spanish

Psychology: § *51.21.3*
303A Research Methods I and II
403B
404Z Practice in Early Childhood Development
408Z Human Information Processing

Philosophy: § *51.18.3*
360Z Formal Logic
362Z Logic and Scientific Method
368Z Symbolic Logic

English: § *51.10.3*
408Z History of the English Language

Theology: § *51.23.3*
340A Theology and the
341B Arts I and II

51.17.5 COURSE DESCRIPTIONS

LINGUISTICS 300Z
Introduction to Linguistics
The nature of language. The methods of language analysis. Introduction to phonology, morphology and syntax. Principles of foreign language instruction. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 310Z
Historical and Comparative Linguistics

The major language families of the world, especially the Indo-European languages. The history of the major European languages. Exercises in etymology and semantics. Lectures: 3 hours per week for two terms. (6 credits).

LINGUISTICS 350Z
Language in Culture and Society

Interrelations of language and other aspects of culture. The cultural content of language materials. Gestalt Theory and Language. Semantic problems in grammatical systems and lexemes. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 400Z
Sociolinguistics

The interaction of linguistic and social structures. Languages in contact. Indigenous and immigrant languages in North America, Dialectology and lexicography. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 430Z

Prerequisite: Linguistics 300Z or permission of the Department. Similarity and diversity among the languages of the world. Interdependence between a language and habitat. Ethnosemantics. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 450Z
Analytical Procedures and
Descriptive Techniques:
Phonetic and Phonemic Analysis

Prerequisite: Linguistics 300Z or permission of the Department. This course is designed to present the procedures of modern phonemics. Speakers of a number of languages will be used as informants to provide actual practice in recording and classifying data, and problems in phonemic analysis will be discussed in class. The main objective of this course will be to provide the student with tools of modern phonemic analysis to allow him to pursue further studies in this field. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 460Z
Language and Thought

Prerequisite: Linguistics 300Z or permission of the Department. The relationships of grammar, competence and performance. The cognitive basis of language learning in infants, linguistic relativism, psychological lexicon. Psychological models of bilingualism. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 470Z
Introduction to General Phonetics

Prerequisite: Linguistics 300 or permission of the Department. Articulatory Phonetics: description of speech sounds in articulatory terms. Students are trained in the identification of most of the sounds found in the different languages of the world.

Acoustics Phonetics: description of speech sounds, frequency and amplitude. Measurement and interpretation of sound spectogrammes, pitch and intensity curves.

Perceptual Phonetics: problems of perception. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 500Z
Linguistics Applied to Language Learning

Contrastive linguistic analysis of English and other languages as related to language learning. Special attention will be given to French, German, Italian, Russian and Spanish. Lectures: 3 hours per week for two terms. (6 credits)

LINGUISTICS 510Z
Theory of Morphology and Syntax

Prerequisite: Linguistics 300Z or permission of the Department. Changes in language in time and across space. The comparative method. Internal reconstruction; dialect geography glotto chronology. Description of attested changes and reconstruction of unattested forms. Traditional and structuralist syntax. Phase structure rules, transformational rules, metatheoretical constraints, notational conventions. Lectures: 3 hours per week for two terms. (6 credits)

51.18 Department of Philosophy

Professor and Chairman
A. KAWCZAK

Associate Professors
J. DOYLE
E. EGAN
E. JOOS
J. McGRAW
V. McNAMARA
J. MORGAN
D. PARK
M. REIDY

Assistant Professors
B. CAVANAUGH
C. GRAY
H. LAU
D. O'CONNOR

51.18.1 PROGRAMMES

60 BA Honours in Philosophy

Year I
12 Phil 410Z[6], 500Z[6]
12 Phil Elec, Phil Elec or Cognate

Year II
12 Phil 420Z[6], 502Z[6]
6 Phil Elec

Year III
12 Phil 430Z[6], 504Z[6]
6 Phil Elec

Electives to be chosen in consultation with the Department.

36 BA Major in Philosophy

Year I
12 Phil 410Z[6], 500Z[6]

Year II
6 Phil 420Z[6]
6 Phil Elec

Year III
6 Phil 430Z[6]
6 Phil Elec

Electives to be chosen in consultation with the Department.

24 Minor in Philosophy

Year I
6 Phil Elec

Year II
6 Phil Elec

Year III
12 Phil Elec

Electives to be chosen in consultation with the Department.

51.18.2 DEPARTMENT OF PHILOSOPHY

The Philosophy Department offers three programmes of study: an Honours, a Major, and a Minor. In addition courses are offered to students with a general or specific interest in Philosophy.

The courses consist of a General Cycle, a History Cycle, Area Courses, and Author Courses. Seminars and Tutorials are offered mainly for students in a programme in Philosophy.

Joint programmes for Majors have been established with the Departments of Biology, Modern Languages, Mathematics, Theology, Classics, and Political Science.

The Chairman of the Philosophy Department should be consulted for information concerning these programmes.

The programme of courses leading to an Honours BA in Philosophy consists of sixty credits in the Department, or fifty-four credits in the Department and a cognate course of six credits outside the Department with the approval of the Philosophy Department. An average of 65% (B) is to be maintained.

The programme of courses leading to a BA with a Major in Philosophy consists of thirty-six credits taken in the Department.

The programme of courses leading to a BA with a Minor in Philosophy consists of twenty-four credits taken in the Department.

51.18.3 COURSE DESCRIPTIONS

PHILOSOPHY 300Z
Tutorial in Philosophy

Prerequisite: Open to Major and Honour students only who are capable of defining a specific study area for themselves and willing to carry out detailed projects under minimum direction. In order to enroll in a tutorial course, the student must obtain the consent of a professor of his own choosing. (6 credits)

PHILOSOPHY 302Z
Introduction to Philosophy

This course introduces students to philosophical analysis and resultant doctrines by choosing certain classical problems which relate closely to their experiences. (6 credits)

PHILOSOPHY 310Z
Ethics

This course studies major theories of normative ethics which may be applied to such problems as obligation, duty, right and virtue. (6 credits)

PHILOSOPHY 320Z
Social and Political Philosophy

Prerequisite: An introductory or basic course in philosophy. This course treats of the individual in relation to the State and Society through the reading and discussion of selected texts. Problems treated: political authority, its sources and varieties; the limits of political authority; classical images of man; personality and society; the paradox of social control. (6 credits)

PHILOSOPHY 322Z
Political Philosophy: Communism, Fascism, and Democracy.

Prerequisite: An introductory or basic course in philosophy. This course concentrates on the theoretical foundations of Communism, Fascism, and Democracy through reading and discussion of selected texts. (6 credits)

PHILOSOPHY 326Z
Legal Philosophy

This course concentrates on definitions of law and the ways of reasoning in law. It includes discussion of such basic legal issues as responsibility and excuse, person and property, right and obligation, contract and punishment. (6 credits)

PHILOSOPHY 331Z
Philosophy of Social Science

Prerequisite: One philosophy course. Following the distinction between natural and social sciences, this course will be concerned with philosophies of the social sciences. It will investigate the structure, methodology, and problems of these sciences toward understanding and clarifying how they function as quasi-separable disciplines and how they contribute to a wider understanding of man and his varied social relations. (6 credits)

PHILOSOPHY 340Z
Metaphysics

In this course, metaphysics will be treated in two ways: firstly, the problem of *being* in classical and contemporary ontologies; secondly, the metaphysical suppositions underlying epistemological, moral and social theories. (6 credits)

PHILOSOPHY 350Z
Epistemology

Prerequisite: One philosophy course. A study of characteristic problems in epistemology with particular emphasis on their historical and systematic contexts. The concepts analyzed include fundamental questions in the empirical sciences and would be of interest to science students. (6 credits)

PHILOSOPHY 360Z
Formal Logic

This course is a modern presentation of traditional logical doctrines concerning such topics as legitimate inference, valid argumentation, and sophistic device. (6 credits)

PHILOSOPHY 362Z
Logic and Scientific Method

The course will start with an analysis of problems arising in everyday thinking, in the use of language and definitions and will proceed toward a methodical development of Aristotelian Syllogistic and the modern theory of natural deduction. It will be followed by the study of induction and the methodological structure of pure mathematics, science, history and normative disciplines. (6 credits)

PHILOSOPHY 364Z
Symbolic Logic

This course shows the student how formalistic deductive systems are developed and how they can be applied to various problems in the field of formal logic. (6 credits)

PHILOSOPHY 366Y
Philosophy of Biology

In cooperation with the Biology Department, this course complements the Biology courses by offering students the opportunity to investigate the philosophical basis and justification of some of the common suppositions of biology and to examine both the broader and the alternative dimensions of several key biological problems. Stress is placed upon helping the student to form and express an adequate opinion of the various topics. There are a number of readings which supplement the lectures and some short papers. (3 credits)

PHILOSOPHY 370Z
The Problem of Evil: Death as a Philosophical Problem

This course treats man's response to evil in general, and death — the ultimate evil — in particular. It attempts to synthesize many areas of philosophy, sociology and psychology. The strictly philosophical readings will be, for the most part, from contemporary Russian and Spanish Existentialists. The central theme of the course is the manner of approach taken to other evils, and even to life itself. (6 credits)

PHILOSOPHY 372Z
Philosophy of Man

This course attempts to help the student who is curious about his own nature to formulate a reasonably satisfying answer to the question: "What is man?" and to explore some of the implications of that answer. (6 credits)

PHILOSOPHY 374Z
Contemporary Theories of Love

Prerequisite: One previous course in philosophy. A two-semester topical analysis of love and attendant phenomena with special emphasis on their metaphysical, epistemological, psychological, aesthetic, social, theological and linguistic dimensions. The classes will be conducted on a lecture-seminar basis. (6 credits)

PHILOSOPHY 377Z
Philosophy of the Person

An analysis of the question: "What is a person?" Several theories of what it is to be a concrete individual person are examined, as are the relationships between a particular theory of personhood and moral, religious and axiological positions.

Some authors to be used are: José Ortega y Gasset, Henri Bergson, Fyador Dostoevski, Gabriel Marcel, Albert Camus, Martin Buber and Nicholas Berdyaev. (6 credits)

PHILOSOPHY 378Z
Philosophy of Communication

This course is concerned with a philosophical analysis of the foundations of communication acts: linguistic and non-linguistic, cognitive and affectivity. Philosophical sources will include: Nietzsche, Max Black, M. Merleau-Ponty and P. Ricoeur. (6 credits)

PHILOSOPHY 380Z
Philosophy of Culture

This course entails a philosophical critique of contemporary western culture, stressing such issues as identity crisis, the weakening of structures of orthodoxy, meditation and humour in relation to the *vita activa*, work in relation to labor, and the socio-cultural manifestation of value crisis. (6 credits)

PHILOSOPHY 381Z
Philosophy of God

The problem of the natural knowledge of God including readings from Plato, Aristotle, Anselm, Aquinas, Descartes, Hume, Pascal, Kant, Hegel, Feuerbach, Marx, Kierkegaard, Newman, Nietzsche, Sartre, Ayer and Russell. (6 credits)

PHILOSOPHY 382Z
Philosophy of Religion

The course offers a critical assessment of

whether in the light of modern developments in philosophy, contemporary thinking man can responsibly maintain a religious belief in God. (6 credits)

PHILOSOPHY 394Z
Aesthetics
This course will examine central problems in the philosophy of art and sensibility, examining the works of major authors in this area, such as Aristotle, Longinus, Kant, Hegel, Dewey, Santayana. (6 credits)

PHILOSOPHY 398Z
Philosophy of Education
An examination of philosophical problems underlying educational theory, as well as those arising from the practical implementation of those theories. (6 credits)

PHILOSOPHY 400Z
Author Course in Philosophy
Prerequisite: Open to 2nd and 3rd year Philosophy Honours and Majors students. An author course is an intensive study of the writings of selected authors. The author or authors to be announced. (6 credits)

PHILOSOPHY 410Z
History of Ancient Philosophy
A study of the origins of Western Philosophy in its ancient Hellenic setting and of its extension into the Christian era. (6 credits)

PHILOSOPHY 413Z
History of Logic
This course traces the development of logic from its ancient Greek beginnings up to issues in contemporary Symbolic Logic. (6 credits)

PHILOSOPHY 420Z
History of Mediaeval Philosophy
Prerequisite: Ancient Philosophy or the permission of the Department. This course traces the career of Philosophy from Boethius and Augustine through the High Middle Ages up to the decline of Scholasticism. (6 credits)

PHILOSOPHY 430Z
History of Modern Philosophy
Prerequisite: One introductory or basic course in Philosophy. This course takes up the career of Philosophy from Descartes, through British Empiricism, Continental Rationalism and Kant up to and including Hegel. (6 credits)

PHILOSOPHY 440Z
Contemporary Philosophy
Prerequisite: One introductory or basic course in Philosophy. This course takes up the story of Philosophy from the Existential revolt through the rise of Positivism and Phenomenology to the present. (6 credits)

PHILOSOPHY 492Z
Chinese Philosophy
This is a general introductory survey course which uses the history of classical Chinese philosophy as a model of the rise of philosophical thought in the mind of man. Its scope extends from the ancients, such as Confucius and Lao Tzu; through the medievals, for example, Wang Ch'ung and the Buddhist Schools such as the consciousness-only school and the Zen School; the moderns, as Chu Hsi and Wang-Yang; to the contemporary scholars such as Fung Yu-Ian and the beginnings of current-day Maoism. (6 credits)

PHILOSOPHY 500Z
First Year Seminar
Topics to be announced. This seminar introduces students to philosophical dialogue by means of programmed discussions concerning philosophical problems chosen for their proximity to the students own experience. (6 credits)

PHILOSOPHY 502Z
Second Year Seminar
Problems in Moral Philosophy. Topics to be announced. This seminar will conduct the students through a series of problems on moral topics. (6 credits)

PHILOSOPHY 504Z
Third Year Seminar
Themes selected from modern and contemporary Philosophy. Topics and authors to be announced. (6 credits)

The following courses are university level courses which were offered in the year indicated but did not appear in the official Calendar.

PHILOSOPHY
1970

Philosophy 526
Problems in Theories of Knowledge (6 credits)

Philosophy 527
Logic and Philosophical Method (6 credits)

51.19 Department of Physics

Assistant Professor and Chairman
M. S. DUBAS S.J.

Professor
S. N. BAGCHI

Associate Professors
C. E. EAPPEN
R. L. KOVACS

Assistant Professors
C. S. KALMAN
T. A. KOVATS
J. SHIN

Senior Lab Demonstrator
S. MARKIZA

51.19.1 PROGRAMMES

97 BSc Honours in Physics

40 Phys 301A[3], 308Z[6], 311B[3], 320B[3], 323A[3], 400A[3], 405B[3], 408A[3], 411B[3], 412B[3], 381[1], 382[2], 481[2], 482[2]
6 Math 334Z[6]
33 Phys* Elec
18 Elec

**A 3-credit course in Ordinary Differential Equations is required in all programmes and this requirement can be fulfilled through elective credits if the student has not already had the equivalent.*

24 Minor in Physics

18 Phys 301A[3], 308Z[6], 311B[3], 400A[3], 405B[3]
3 Phys (Lab) 381[1], (382[2] or 481[2])
3 Phys* Elec

**A 3-credit course in Ordinary Differential Equations is required in all programmes and this requirement can be fulfilled through elective credits if the student has not already had the equivalent.*

91 BSc Specialization in Physics

40 Phys 301A[3], 308Z[6], 311B[3], 320B[3], 323A[3], 400A[3], 405B[3], 408A[3], 411B[3], 412B[3], 381[1], 382[2], 481[2], 482[2]
6 Math 334Z[6]
21 Phys* Elec
24 Elec

**A 3-credit course in Ordinary Differential Equations is required in all programmes and this requirement can be fulfilled through elective credits if the student has not already had the equivalent.*

37 BSc Major in Physics

21 Phys 301A[3], 308Z[3], 311B[3], 400A[3], 405B[3], 408A[3]
7 Phys (Lab) 381[1], 382[2], 481[2], 482[2]
3 Phys* Elec
6 Math 334Z[6]

**A 3-credit course in Ordinary Differential Equations is required in all programmes and this requirement can be fulfilled through elective credits if the student has not already had the equivalent.*

51.19.2 DEPARTMENT OF PHYSICS

The Department offers programmes leading to a 24-credit Minor, a 37-credit Major, a Specialization and an Honours degree. Students in the specialized programmes will be required to take a number of specified courses to which a variety of Physics electives can be added depending upon the degree of specialization desired and the current availability of course offerings.

Students intending to follow the Honours programme will be required to maintain an overall average of 65% in all Physics courses and a minimum of 55% in each Physics course.

51.19.3 COURSE DESCRIPTIONS

NOTE: All Physics courses except PHYS 101Z, 315A, 316Z, 317B, 345A, 351A and 355B require the equivalent of 6 credits of Collegial Physics and 6 credits of Collegial Calculus as prerequisites.

PHYSICS 101Z
General College Physics

(High School courses in Physics and functions highly recommended. Mathematics 133 and 135 must be taken currently). An introductory course in the elements of mechanics, thermo-

dynamics, light electricity and magnetism. Lectures: 3 hours per week for two terms. Lab: 2 hours per week, for two terms. Reference text: J. G. Stipe, *The Development of Physical Theories*. (McGraw-Hill) and *An Elementary College Course in Experimental Physics* (lithographed lab manual). (6 credits).

PHYSICS 301A
Optics

Principles of Geometrical and Physical optics interference, diffraction, polarization, Double refraction. Lectures: 3 hours per week. Reference text: Morgan, *Introduction to Geometrical and Physical Optics*, (McGraw-Hill.) (3 credits)

PHYSICS 302Z
Space Physics

A highly descriptive course for university science students in the elements of astronomy, astro-physics, artificial satellite motion and space travel. The topics covered are: The earth and its motions; celestial mechanics; the solar system; elements of atomic physics; radio astronomy; the sun, other stars, galaxies and nebulae; artificial satellite motions; communication satellites; rocket motion; space travel; apollo missions and their findings; the nature of our universe. Lectures: 3 hours per week for two terms. Reference text: S.P. Wyatt, *Principles of Astronomy* (Allyn & Bacon) (6 credits)

PHYSICS 308Z
Electricity and Magnetism

Coulomb's Law. Electric fields. Gauss's Law. Electric potential. Capacitance. Dielectric theory and behaviour. Direct currents. Moving charges and Magnetic fields. E. M. induction. Mutual and self inductance. Magnetic properties of matter. Steady-state AC circuit analysis. Maxwell's equations and electro-magnetic waves. Reference Text: A. F. Kip, Fundamentals of Electricity and Magnetism. (6 credits)

PHYSICS 311B
Mechanics

Prerequisite: One half course in differential equations. Particle kinematics. Newtons' laws. Elastic forces. Force, momentum, torque, angular momentum, energy, stable equilibrium, conservative forces, driven damped oscillation, force fields, central forces. Lectures: 3 hours per week. Reference Text: W. Arthur and K. Fenster, *Mechanics*. (3 credits)

PHYSICS 315A
The Mechanics of Visual Representation

An introductory course combining laboratories and lectures illustrating the basic laws which govern and control the mechanism of image reproduction. Relevant topics concerning the interaction of light and materials are discussed and demonstrated. Students perform experiments with light-sensitive materials, the pin-hole camera, light intensity and illumination measurement. Human visual response, the gray scale, sensitometry, densitometry, the characteristic curve and ASA, DIN, film speeds are examined in depth. This course parallels the Chemistry lab course 315A, and both are designed to complement the "Dynamics of Visual Representation" course (Communication Arts 360). This course is designed for students in Communication Arts. Lab & Lectures: 3 hours per week. Reference Texts: M. J. Langford, *Basic Photography*. (Amphoto). T. H. James and G. C. Higgins, *Fundamentals of Photographic Theory*. (Morgan & Morgan). (3 credits)

PHYSICS 316Z
Understanding the Physics of Media

The course covers the evolution of Physics in the discoveries that apply to our technology and media. This course is designed for Communication Arts students. Lab: one 3 hour session per week for two terms. Reference Text: A. Einstein & L. Infeld, *The Evolution of Physics*. (6 credits)

PHYSICS 317B
The Physics of Photo-Reproduction

Prerequisite: Phys 315A. A combined laboratory and lecture course designed for students in Communication arts who have some basic knowledge of physical laws. Ideas introduced in the "Mechanics of Visual Representation" (Phys 315A) are further developed, covering such topics as exposure measurements and control, and the Standard Association Institute Photographic Exposure Guide. The mechanics of a lens, image formation, f-stops diaphragm openings, the 3-colour composition of light, the colour-temperature scale, and filters, are studied. This course is so designed that the student will gain an intelligent and efficient use of his equipment. Lab & Lectures: 3 hours per week. Reference text: M. J. Langford, *Basic Photography*. (Amphoto) (3 credits)

PHYSICS 320B
Mathematical Physics I

Vector spaces. Matrices and determinants. Linear operators. Linear coordinate transformations. Systems of simultaneous linear equations. Eigenvalue problems. Quadratic forms. Lectures: 3 hours per week. Reference text: to be announced. (3 credits)

PHYSICS 323A
Mathematical Physics II

Prerequisites: Phys 320B, Math 334Z (Advanced Calculus). Classification and derivation of partial differential equations of physics. Orthogonal functions. Sturm-Liouville problem and special functions. Test of uniform convergence. Theory of Fourier Series. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 345A
Introduction to Consumer and Commercial Electronics

A course primarily for people who wish to acquire a basic knowledge of some of today's consumer and commercial electronics, but leaving out most of the extensive theories. The course consists of a series of lectures, laboratory projects and demonstrations. Topics to be treated are: High Fidelity Amplifiers; Program Sources and Reproducers; AM, FM and SSB Transmission; Black and White and Colour Television Reception; Auto-Electronics; Electronic Control Systems; Applications of Linear and Digital Integrated Circuits. Lectures: 2 hours per week. Lab: 2 hours per week. Reference text: P. Zbar, *Industrial Electronics* (2nd Ed.); Printed notes. (3 credits)

PHYSICS 351A
Biomechanics of Human Motion

The application of elementary laws of mechanics to the understanding of static equilibrium conditions of the human body subjected to external forces — the efficiency of human movement seen from the reference point of physical laws as applied to sports. This course is intended for the physiotherapist, the athlete, and all those interested in understanding body mechanics in the light of inanimate physical laws. Lectures: 3 hours per week. Reference text: Geoffrey Dyson, *The Mechanics of Athletics* (U. of London, 6th E.). (3 credits)

PHYSICS 353B
Biophysics

Selected topics in physics as they relate to biology. Physical forces in biological systems: mechanical, electromagnetic, osomotic, "thermal". Radiation — electromagnetic and acoustical: nature, sources, effects. Transport processes: electrical, thermal, fluid. Lectures: 3 hours per week. Tentative test 3; Biophysics, Concepts and Mechanisms. (Reinhold, 1962) (3 credits)

PHYSICS 355B
Electronic Instrumentation

This course is recommended for science students and others who might be working in

scientific research laboratories. This course begins with basic electrical measurements and gradually leads to amplifier circuits of vacuum tubes and transistors, operational amplifiers, oscillators, servo systems as in strip chart recorders, feed-back control, digital circuits and other devices currently used in research laboratories. Lectures: 3 hours per week. Lab: 2 hours per week. Reference text: To be announced. (4 credits)

PHYSICS 400A
Atomic Physics

Prerequisites: Phys 308Z, 320B and 3 credits in Ordinary Differential Equations. Special Relativity. Particle properties of waves. Wave properties of particles. Atomic structure. Bohr model of the atom. Schrodinger's equation. Lectures: 3 hours per week. Reference texts: A. Beiser, *Perspectives in Modern Physics* (McGraw-Hill) Richtmeyer, Kennard, Cooper, *Introduction to Modern Physics* (McGraw-Hill. (3 credits)

PHYSICS 405A
Classical Thermodynamics

Temperature and thermometry; first and second laws of thermodynamics with applications; kinetic theory; special topics. Lectures: 3 hours per week. Reference text: M. W. Zemansky, *Heat and Thermodynamics*, (McGraw-Hill, 5th ed.) Sears, *Introduction to Thermodynamics;* Kinetic *Theory and Statistical Mechanics*, (Addison-Wesley). (3 credits)

PHYSICS 408A
Electronics I

Prerequisite: Phys 308Z or equivalent. Review of AC and DC network theory; Elementary semiconductor theory as applied to P-N junctions; Power supplies and diode applications; Theory of transistors; Hybrid models of transistors; Analysis of single and multi-stage amplifiers. Field effect transistors, MOS devices; Silicon control rectifiers. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 409A/B
Statistical and Thermal Physics

Prerequisites: Phys 400A, 412B and 405A Elementary probability theory, Gaussian distribution, statistical enumeration of microstates, equilibrium distributions, thermal and mechanical interactions, definitions of temperature and entropy, laws of thermodynamics and applications; partition functions, canonical ensembles, statistical distribution functions and their applications. Lectures: 3 hours per week. Reference texts: Reif, *Statistical and Thermal Physics* (McGraw-Hill); K. C. Macdonald, *Introductory Satistical Mechanics for Physicists*. (3 credits)

PHYSICS 411A
Mechanics

Prerequisite: Phys 311B. Kinematics of systems of particles and rigid bodies. Particle collisions, rocket motion, plane motion of rigid bodies. Impulse. Particle motion in non-inertial frames, space motion of a particle. Rigid body motion about a fixed point, gyroscopes. Introduction to equations of Lagrange and Hamilton. Lectures: 3 hours per week. Reference text: H. Goldstein, *Classical Mechanics* (3 credits)

PHYSICS 412B
Introduction to Quantum Mechanics

Prerequisite: Phys 400A. The Schrodinger equation. The particle motion in a box. Harmonic oscillator. Quantum Theory of hydrogen atom. Magnetic quantum numbers. Angular momentum. Electron spin. Exclusion principle. Periodic table. Atomic spectra. X-ray spectra. Lecture: 3 hours per week. Reference texts: A. Beiser, *Perspectives of Modern Physics* (McGraw-Hill) Richtmyer, Kennard, Cooper, *Introduction to Modern Physics* (McGraw-Hill). (3 credits)

PHYSICS 413 A/B
Advanced Mechanics

Prerequisites: Phys 320B, 323A and 411A Lagrange equations, variational principles, central force scattering, kinematics of rigid bodies using orthogonal matrices — Cayley-Klein parameters and Pauli-spin matrices. Rigid body motion — Covariant Lagrangian and Hamiltonian equations. Minimal principles; canonical transformations Lagrange and Poisson brackets. Hamilton-Jacoby theory. Small oscillations. Lectures: 3 hours per week. Reference text: H. Goldstein, *Classical Mechanics*, (Addison-Wesley). (3 credits)

PHYSICS 420A/B
Mathematical Physics III

Prerequisite: Phys 323A. The Fourier method and the solution of partial differential equations in mathematical physics. Special functions. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 421A/B
Mathematical Physics IV

Prerequisite: Math 334Z (Advanced Calculus). Complex numbers. Complex functions. Analytic functions. Cauchy theorem. Integral theorems. Taylor and Laurent series. Residue theorem. Fourier and Laplace transforms and their application to ordinary and partial differential equations. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 503A/B
Nuclear Physics

Prerequisites: Phys 400A and 412B. Radioactivity, decay laws, nuclear transitions and reactions, passage of radiation through matter. Detection and acceleration of particles. Nuclear structure and models. Neutrons. Introduction to High Energy Physics. Lectures: 3 hours per week. Lab: 3 hours per week. Reference texts: Halliday, *Introductory Nuclear Physics* (Wiley); *Smith, A textbook of Nuclear Physics* (Macmillan); Kaplan, *Nuclear Physics* (Addison Wesley). (4 credits)

PHYSICS 505A/B
Introduction to Solid State Physics

Prerequisites: Phys 400A, 412B and 409, the latter taken concurrently. Crystal structure of solids. Crystal diffraction. Lattice dynamics. Specific heat. Electrons in metals. Free electron theory of conduction, band theory, semiconductors, dielectric and magnetic properties of solids, and related special topics. Lectures: 3 hours per week. Reference Texts: Levy, *Principles of Solid State Physics* (Academic Press); Blakemore, *Solid State Physics* (Saunders); Kittel, *Introduction to Solid State Physics* (Wiley). (3 credits)

PHYSICS 508A/B
Electronics II

Prerequisites: Phys 408A. A continuation of Electronics I with emphasis on circuit applications and analysis. Topics include digital logic gates and implementation of logic functions, differential amplifiers, high impedance circuits, oscillators, multivibrators and pulse circuits, power amplifiers, noise and feedback analysis. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 511A/B
Relativity

Prerequisites: Phys 311B, 320B and 411B. Classical theory of some light experiments. Postulates of the Special Theory. Lorentz transformation. Relativistic kinematics. Relativistic mechanics of a particle. Four-dimensional formation of the Special Theory. Electrodynamics in a vacuum. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 512A/B
Electromagnetic Theory

Prerequisites: Phys 308Z, 323A, 420A. Derivation of the laws of electrostatics and magnetostatics from the basic experimental laws; method of images; solutions of Laplace's and Poisson's equ-

ations for electrostatic problems, magnetism, Maxwell's equations. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 513A/B
Electromagnetic Theory

Prerequisite: Phys 512A. Wave Solutions of Maxwell's equations in various media. Classical model of a dielectric. Helmholtz equation and wave equation by Green's functions. Multipole fields. Interaction of charged particles. Radiation by moving charges. Abraham Lorentz theory. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 514A/B
Quantum Mechanics

Prerequisites: Phys 400A, 412B, 420A. Postulates of quantum mechanics; operator formalism; algebraic methods, angular momentum; approximation methods; scattering identical particles. Lectures: 3 hours per week. Reference text: To be announced. (3 credits)

PHYSICS 381
Optics Lab (1 credit)

Prerequisite: Phys 301A.

PHYSICS 382
Electricity and Magnetism Lab (2 credits)

Prerequisite: Phys 308Z.

PHYSICS 481
Atomic Physics Lab I (2 credits)

Prerequisite: Phys 400A.

PHYSICS 482
Electronics Lab I (2 credits)

Prerequisite: Phys 408A.

PHYSICS 581
Atomic Physics Lab II (2 credits)

Prerequisite: Phys 400A.

PHYSICS 582
Electronics Lab II (2 credits)

Prerequisites: Phys 408A, 482 and 508 concurrently.

51.20 Department of Political Science

Associate Professor and Chairman
R. C. COYTE

Associate Professors
H. P. HABIB
K.S. OH

Assistant Professors
M. DANIS
L. LASZLO
J. W. MOORE
E. PRICE
F. STARK

51.20.1 PROGRAMMES

60	**BA Honours in Political Science**
	Year I
18	Pol Sc
	Year II
18	Pol Sc
	Year III
24	Pol Sc

42	**BA Major in Political Science**
	Year I
12	Pol Sci
	Year II
12	Pol Sci
	Year III
18	Pol Sci

51.20.2 DEPARTMENT OF POLITICAL SCIENCE

A Major in Political Science consists of seven courses in the Department. In the first year a student must include Political Science 300 if he has not completed an equivalent course at Loyola or another institution. Five elective courses must be taken in departments other than Political Science. A student's programme will be arranged in consultation with the Department.

An Honours in Political Science consists of ten courses in the Department or nine courses in the Department and one cognate course taken with the approval of the Department. In the first year a student must include Political Science 300 if he has not completed an equivalent course at Loyola or another institution. Five elective courses must be taken in departments other than Political Science.

Honours students are required to take three courses in the 2nd and 3rd year from the Honours seminars listed below. Political Science 590Z may be substituted for one Honours seminar with the permission of the Department.

520Z Seminar on Quebec Government and Politics
524Z Seminar on Canadian Federal, Provincial and Municipal Government
540Z Seminar on Methodology of Political Science
542Z Seminar on Asian Communism
544Z Seminar on Politics of Eastern Europe
550Z Seminar on Problems of Modern Federalism
560Z Seminar on Advanced Comparative Political Systems
570Z Seminar on Government and Economic Policy
590Z Seminar on Modern Political Thought

An Honours student will be required to maintain a 65% average in all his courses and a minimum of 70% in Political Science Courses and pass a comprehensive oral examination at the end of the 3rd year. Students intending to pursue graduate studies in Political Science are advised to include course 540Z. A student's programme will be arranged in consultation with the Department.

51.20.3 COURSE DESCRIPTIONS

Explanation of Course Numbers

1. Courses in the 300 and 400 range are open to all Political Science students and students in other departments.
2. Courses in the 500 range are open to all students in Political Science who are in their second and third year. Students in other departments may take these courses with the permission of the Political Science Department.

POLITICAL SCIENCE 300Z
Introduction to Political Science

A description of the features universal to the governing processes of societies and the nature and consequences of the major variations in these processes. The course combines a theoretical and conceptual framework with a study of selected political systems and countries. It is designed to act both as introduction to the discipline for those students who plan to study further and to serve also those students who require a systematic examination of the field in a single course. (6 credits).

POLITICAL SCIENCE 310Z
International Politics

Prerequisite: Political Science 300 or CEGEP equivalent. This course is designed to offer an introduction to International Politics for majors and honours students in Political Science. The course will be devoted to a systematic study of inter-state behaviour both in the period of peace and war. It will include a study of the theoretical approaches, nation-state system, national power and capability, techniques for the management of power, diplomacy and foreign policy, propaganda and psychological warfare, role of International Law and world organization, and world politics. (6 credits)

POLITICAL SCIENCE 320Z
Canadian Government and Politics

Prerequisite: Political Science 300 or CEGEP equivalent. A detailed analysis of the BNA Act. A survey of constitutional development in Canada. An institutional and functional analysis of the executive, legislative, judicial and administrative branches of the Canadian Government. A study of the Canadian political process: the electoral system, political parties, interest groups and public opinion. Seminars on issues and problems in Canadian politics: the constitutional question, economic and fiscal policy, foreign policy: health, education and welfare: pollution, drugs and civil rights. (6 credits)

POLITICAL SCIENCE 321A
American Government and Politics

Theory and practice of American government. Attention is given to identifying the values and outlining the character of the American people with emphasis on political behaviour and institutions and the determination and execution of public policy. (3 credits)

POLITICAL SCIENCE 340Z
The Government and Politics of the Soviet Union

A study of the government and politics of the Soviet Union. Discussion of the basic theories of Communism and the evolution of the Soviet system. (6 credits)

POLITICAL SCIENCE 351B
British Government and Politics

Government and Politics in Britain with particular emphasis on political parties and pressure groups, the changing role of the legislature and executive, and the Public Corporations. The issues of current constitutional interest will be discussed such as the office of Prime Minister and parliamentary sovereignty. (3 credits)

POLITICAL SCIENCE 361A
International Organization

A survey and analysis of attempts to institutionalize order and change in international society. Chief emphasis will be on the United Nations and its affiliates. (3 credits)

POLITICAL SCIENCE 363B
Regional Organizations

A survey and analysis of attempts to institutionalize order and change in international society. Chief emphasis will be on the European Community, COMECON, NATO, OAS, etc. (3 credits)

POLITICAL SCIENCE 371A
Nationalism: Origins, Operation, Significance

Prerequisite: Political Science 300, or CEGEP equivalent or permission of instructor. Examines the foundations of nationalist ideology developed originally in the early 19th century as a purely European phenomenon. Considers specific nationalist ideologies — European, African, Asian, etc. — with regard to their modality of operation and their significance in relation to a society's capacity to evolve and confront the demands, both internal and external, of the contemporary environment. (3 credits)

POLITICAL SCIENCE 373B
Nationalism, The Canadian Experience

Prerequisite: Political Science 300 or CEGEP equivalent or permission of instructor. Examines the origins and development of nationalism and regionalism in Canada with particular attention centered upon the interaction between French-Canadian and English-Canadian nationalist sentiments. Considers the similarities and divergencies of nationalist and regionalist sentiment in Canada with those of European nationalism, and evaluates their significance with regard to the development of the Canadian federation and its capacity to confront the realities and demands of the modern technological environment. (3 credits)

POLITICAL SCIENCE 391A
Ancient Greek Political Philosophy

A study of the political thought of ancient Greek philosophers. (3 credits)

POLITICAL SCIENCE 393B
Roman, Mediaeval, and Renaissance Political Philosophy

A study of the political thought of Rome during the Republican and the Imperial period, with special emphasis on Cicero's *On the Commonwealth;* the Political thought of the mediaeval world, with special emphasis on St. Augustine's *The City of God;* and the political thought of Renaissance, where the emphasis will be placed on Machiavelli's *The Prince & The Discourses.* (3 credits)

POLITICAL SCIENCE 411A
An Introduction to International Law I

The meaning of international law, its sources, subjects and its relationship with municipal law, recognition, state succession and state territory; rights and duties of states; role of international law in the international community. (3 credits)

POLITICAL SCIENCE 413B
An Introduction to International Law II

International transactions; Evolution and History of Diplomacy; its relationship to international law; diplomacy of the great powers; law and practice as to treaties; disputes, war and neutrality. (3 credits)

POLITICAL SCIENCE 420Z
Parties, Pressure Groups and Public Opinion

An examination of the functions of party and pressure groups with an emphasis on political socialization and education, ideology, political recruitment and leadership selection, interest aggregation, and intragovernmental organization; of the process of the formulation of public opinion, the nature of its expression, and its impact on public policy; the course will be centered on the Canadian political system. (6 credits)

POLITICAL SCIENCE 424Z
An Introduction to Law and the Canadian Constitution

An introduction to law in general and the Civil Code, in particular, with references to the Criminal Code, Companies Act and others. This course will also deal with the Canadian Constitutional System and its major interpretations by the Courts. (6 credits)

POLITICAL SCIENCE 428Z
Public Administration

A theoretical study of government management and institutions, based on the Canadian administrative experience and related to Anglo-American comparative practice. (6 credits)

POLITICAL SCIENCE 431A
Statistics for Political Scientists — Theory

This course provides a framework of those statistics useful to political scientists: the theory of statistics, summarization of distributions, measures of association, categories of data, scaling, statistical inference, probability, problems of spurious correlation, and introduction to computer techniques. (3 credits.)

POLITICAL SCIENCE 433B
Statistics for Political Scientists — Application

This course deals with the most common applications of statistics to political concerns: the structure of quantitative hypotheses and research designs, the construction of opinion surveys and sampling procedures; Guttman scaling, analysis of legislative voting, content analysis of documents, J-curve analysis of political change, factor analysis of international affairs data, simulation and the problems of applying quantitative methods to human beings. (3 credits)

POLITICAL SCIENCE 441A
Contemporary Politics of China

An analysis of .the present government and politics of the People's Republic of China with special emphasis on the Communist movement, the rise of Mao Tse-tung, the triumph of Communism in China, the role of CCP, political structure and govermental performance, socio-political reform, and China and the World. (3 credits)

POLITICAL SCIENCE 443B
Contemporary Politics of Japan

An analysis of the political development of Japan since the end of World War II with special emphasis on the construction of new Japan, old and new constitutions, political structure and governmental performance, parties and interest groups, domestic and foreign policies, and Japan and East Asia and the World. (3 credits)

POLITICAL SCIENCE 446Z
Comparative Government

Prerequisite: Political Science 300 or CEGEP equivalent. A comparative study of the Governments of the United Kingdom, France and the Federal Republic of Germany. (6 credits)

POLITICAL SCIENCE 450Z
African Government and Politics

The government and politics of African states south of the Sahara with reference to traditional political systems, colonial policies, nationalism, and the problem of nation building. (6 credits)

POLITICAL SCIENCE 455A
(Also given as History 381 § 51.14.2)
The Middle East in World Politics

Islamic Heritage: Nationalism, Zionism and Contemporary Problems (Arab-Israeli Conflict: U.S.A.-U.S.S.R. Power Struggle). (3 credits)

POLITICAL SCIENCE 457B
(Also given as History 383B § 51.14.2)
Mid-East Political Systems

A comparative study of a selected number of Mid-East Governments (Turkey, Egypt, Libya, Syria, Iraq, Lebanon, Israel, Jordan, Saudi Arabia and Yemen). (3 credits)

POLITICAL SCIENCE 480Z
Politics of Developing Areas

An examination of the effects of social change on political institutions in developing areas. The course will deal with such questions as: How do actions of governments directly influence the process of modernization? How do patterns of governmental organization influence the speed and direction of change? What organs of government seem best able to deal with the increasingly numerous problems caused by modernization? Are specific types of political institutions required for modernization? (6 credits)

POLITICAL SCIENCE 491A
Early Modern Political Philosophy

The Reformation and the rise of modern individualism. The principal political thinkers studied in this period will be Luther, Calvin, Bellarmine, Bodin, Hobbes, Harrington, Locke. (3 credits)

POLITICAL SCIENCE 493B
Late Modern Political Philosophy

The Enlightenment and its critics and the political thought of the early industrial period. The most important thinkers to be studied in this period are de Montesquieu, Hume, Rousseau, Burke, J. S. Mill and Marx. (3 credits)

POLITICAL SCIENCE 520Z
Seminar on Quebec Government and Politics.

An institutional and functional survey of the executive, legislative, judicial and administrative branches of the Quebec government. A detailed study of Quebec's jurisdictional and fiscal problems with the federal government. Discussions on the political process in Quebec; the electoral system, political parties, pressure groups and public opinion. The role of the Catholic Church in Quebec politics. A study of the most important thinkers in French Canada. (6 credits)

POLITICAL SCIENCE 524Z
Seminar on Canadian Federal, Provincial and Municipal Government.

A broad survey of the basic constitutional powers under Sections 91-92 of the BNA Act, judicial review, federal-provincial fiscal relations and the state of federalism in Canada today. The main emphasis of the course falls on the provincial-municipal relations, the organization and structure of local government and services, forms of metropolitan and regional government. (6 credits)

POLITICAL SCIENCE 540Z
Seminar on Methodology of Political Science

An analysis of the various methodologies in use in Political Science today — with emphasis on the behavioural techniques. The Behaviouralist vs. Traditionalist debate will be explored. Designed for third year Honours students in Political Science. (6 credits)

POLITICAL SCIENCE 542Z
Seminar on Asian Communism.

An intensive analysis of Communism as it relates to the implication of political ideas, institutions, and domestic and foreign policies of East Asian countries. Some of the topics to be examined are: (1) ideological factors (2) socio-political base (3) institutional organizations (4) political leadership (5) tactics and strategies (6) current problems (7) Communist movement of Non-Communist party-states. (6 credits)

POLITICAL SCIENCE 544Z
Seminar on the Politics of Eastern Europe.

A study of selected problems of government in the Soviet Union and Eastern Europe. Participants must present two major research papers for discussion. (6 credits)

POLITICAL SCIENCE 550Z
Federalism and the Modern Technological World Society.

A consideration of the accrued importance of the federal principle of government in the political organization of humanity resulting from the centralizing and decentralizing influences of modern technology on today's global society. Examines the global problem of co-existence in today's multi-national world society and evaluates the capacity of federalism to assure a certain measure of progress in the political organization of humanity more in accord with the social, economic and technological realities of contemporary world society. Considers federalism's ability to provide by the means to absorb the tensions that can arise from the co-habitation of divergent communities

and to surmount the primordial obstacle that has prevented evolution in the political organization of humanity, namely: mankind's tendency to remain blindly dominated by its various nationalistic passions. Particular attention is given to the Canadian federal system as well as to several other multi-communitary federal states, with regard to the problem of cohabitation in multi-communitary societies. (6 credits)

POLITICAL SCIENCE 560Z
Seminar on Advanced Political Systems.

A seminar on the major political systems with special emphasis on Europe. (6 credits)

POLITICAL SCIENCE 570Z
Seminar on Government and Economic Policy.

A seminar on the role of government in the economic life of different countries; the relation of economic and political power, the changing balance of public and private power in political systems. Emphasis will be on Canadian government and economic policy formation. (6 credits)

POLITICAL SCIENCE 580Z
Seminar on Legislative, Executive and Judicial Decision-Making

An examination, using Canada as the model, of the formation of decisions in the legislative, executive, and judicial branches of government. Special attention will be given to: the structural-functional approach; developmental analysis of such an explanation of behavioural patterns; and, comparative analysis to identify uniformities in patterns of behaviour. (6 credits)

POLITICAL SCIENCE 590Z
Seminar on Modern Political Thought.

A study of the main currents in modern political thought in the past century with special emphasis on the outstanding political philosophers of this period. (6 credits)

POLITICAL SCIENCE 592Z
Tutorial in Political Science

Prerequisite: Open only to 3rd year Political Science Honours students. A tutorial in a selected topic of Political Science to be undertaken under the direction of a professor in the department. The topic to be agreed upon by consultation between the student and the professor. (6 credits)

51.21 Department of Psychology

Assistant Professor and Chairman
M. L. SHAMES

Associate Professors
P. BABARIK,
J. H. BAUER,
H. W. LADD,
V. MAHEUX,
R. M. LAMBERT

Assistant Professors
J. CAMPBELL,
E. MOULEDOUX,
Y. L. PERRAULT,
R. D. SEENS

51.21.1 PROGRAMMES

60	BA Honours in Psychology
	Year I
12	Psyc 301B[3], 303A[3], 300Z[6]
	Year II
6	Psyc 401A[3], 403B[3]
18	Psyc Elec
6	Cognate Elec
	Year III
12	Psyc 500Z[6], 502Z[6]
6	Psyc 400[6] or 500[6] Level

72	BSc Honours in Psychology
	Year I
12	Psyc 300Z[6], 301B[3], 303A[3]
6	Chem 326A[3], 328B[3]
6	Bio 320Z[6]
	Year II
6	Psyc 401A[3], 403B[3]
18	Psyc Elec
6	Sc Elec
	Year III
12	Psyc 500Z[6], 502Z[6]
6	Psyc 500[6] or 400[6] Level

72	BSc Specialization in Psychology & Biology
	Year I
12	Psyc 300Z[6], 301B[3], 303A[3]
3	Chem 326A[3]
3	Chem 328B[3]
6	Bio 320Z[6]
	Year II
6	Psyc 401A[3], 403B[3]
12	Bio 420Z[6], 430Z[6]
6	Psyc Elec
	Year III
6	Psyc Elec
6	Bio 524Z[6]
6	Bio 540Z[6]
6	Elec (Psyc or Bio)[6]

36	BA Major in Psychology
	Year I
12	Psyc 300Z[6], 301B[3], 303A[3],
	Year II
6	Psyc 401A[3], 403B[3]
6	Psyc Elec
	Year III
12	Psyc Elec

60	BSc Major in Psychology
	Year I
12	Psyc 300Z[6], 301B[3], 303A[3]
6	Chem 326A[3], 328B[3]
6	Bio 320Z[6]
	Year II
6	Psyc 401A[3], 403B[3]
6	Psyc Elec
6	Sc Elec
	Year III
12	Psyc Elec
6	Sc Elec

51.21.2 DEPARTMENT OF PSYCHOLOGY

The Department of Psychology offers a programme leading to both a BA and a BSc with a Major, Specialization in Psychology and Biology or Honours degree in Psychology. Double Majors with other departments can be arranged. The curriculum is designed to provide for a broad general education, as well as to give adequate preparation for graduate studies in Psychology. Although some courses in applied Psychology are offered, the major emphasis of the programme is theoretical and experimental.

Students entering the science programme must have successfully completed the Science programme at the CEGEP level. Minimum requirements would therefore be

two full courses in Mathematics, one full course in Chemistry and Physics and one half course in Biology.
NOTE: Science electives must be chosen from the following departments: Physics, Chemistry, Biology, Geology, Mathematics.

Description of the Major Programme

A Major in Psychology consists of a minimum of six courses in the subject, including 300Z, 301B and 303A in the first year and 401A and 403B in the second year. These courses will provide the student with not only the practical experience in psychological research of all types, but also an understanding of philosophical and scientific origins of Psychology and of the epistemological basis of scientific research methodologies. Students wishing to take Psychology 506Z, Directed Readings, should prepare, before the beginning of the Fall term, a list of books that have relevance to the problem area undertaken for study by the student. For courses at the 400 and 500 level, there are specific prerequisites. *The relevant prerequisites are listed with each course. Students wishing to take these courses who do not have the necessary prerequisites may register for the course with approval of the instructor.* Courses 300 to 313 are available to students in all three years. Students are advised to consult with the instructor for more detailed information. *Among their Psychology electives, all Honours and Major students must choose not less than Six credits from both* **category A** *(Psychology 302, 308, 310, 313*[3], 315[3], 412, 414) and **category B** (304, 306, 402[6], 404[6], 406[6]).

Description of the Honours Programme and Special Requirements.

The department offers an Honours degree in both Arts and Science. Honours represents a greater degree of specialization in the field than a Major Programme allows and is an indication of higher academic standing. In order to be admitted to the programme a student must have met the same criteria which define the successful Honours student. A successful Honours student must achieve and maintain no less than a 70% minimum grade in each of his psychology courses, not less than 55% in any courses, and a 65% overall average. A student not meeting these requirements will lose his Honours status, but may continue in the Major Programme.

Acceptance for the Honours Programme will depend upon performance during the first University year.

Students wishing to register for Honours must apply at the end of the first year and not later than registration time in the second year. It is possible, however, for a student who, although he may not have been registered as an Honours student, nonetheless has the necessary requirements, to enter the programme at any time before registration for the final year. The standing of Honours students will be reviewed each year by the department.

Those students wishing to apply for admission should obtain an application form from the secretary's office, B-306, Bryan Building. The completed application together with one copy of the applicant's latest transcript of grades must be filed with the secretary. All applicants will be notified in writing of their acceptance or non-acceptance into the Honours Programme. Successful applicants will be required to meet with a faculty advisor to work out their course programme. Successful candidates for the Honours degree will be required to complete 102 credits as opposed to 90 credits required in the Majors Programme. The twelve extra credits required of all Honours candidates consist of 1) a Seminar course, and 2) an Honours Thesis. These two extra courses will be taken in the candidate's final year.

Psychology 502Z, Honours Seminar, is a course for Honours students only.
NOTE: A cognate elective is to be decided upon in concert with the Department.

51.21.3 COURSE DESCRIPTIONS

PSYCHOLOGY 200Z
Introductory Psychology.

This course is intended for the general arts and science student. In addition to introducing some major ideas and findings of Theoretical Psychology, we will examine the advantages and strengths of a behavioristic approach which studies man as an organism by means of the experimental methods of the biological and social sciences. We will also explore some esoteric psychologies. This course does not constitute a Psychology credit for the Psychology Major or Honours student. Lectures: 3 hours per week for two terms or six hours per week in the second term. (6 credits)

PSYCHOLOGY 300Z
Historical Approach to Systematic Psychology.

This is a comprehensive course which is intended to give an appreciation of how and why Psychology developed as it did in relation to historical-cultural milieux, major trends in intellectual history, contending philosophical assumptions and technical and methodological developments. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 301B
Statistics

Material presented in this course will include: Probability theory, frequency and probability distribution, measures of central tendency and dispersion, theory of sampling distributions, normal distributions, theory of hypothesis testing and the theory of inferences about population means. This material is intended to provide both a theoretical and a practical foundation in statistics for the student interested in conducting or utilizing the results of psychological research. Lectures: 3 hours per week, second term. (3 credits)

PSYCHOLOGY 302Z
Human Motivation

This course will consider determinants of human motivation. Theories of human motivation will be studied and evaluated. (6 credits)

PSYCHOLOGY 303A
Research Methods.

A lecture and laboratory course in basic methods used in psychological research. Students will be required to design, conduct, analyse and report on a number of experiments. Required course for all majors in Psychology. Lectures. 3 hours per week, first term. Lab: 3 hours per week, first term. (3 credits)

PSYCHOLOGY 304Z
Developmental Psychology.

A study of physical, cognitive, emotional and social development, with emphasis on childhood, adolescence and normal development, with some consideration of age-related deviant patterns. The course is given in lecture style, but with weekly informal workshops on special interest areas and on the development of student's skills in observational methods. Students are required to carry out observations of children in a variety of natural settings. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 306Z
Personality: Normal and Abnormal.

The organization, functioning and development of personality will be elaborated according to personality theories. Evidence from experimental and field studies which are relevant to personality will be related to the basic theoretical development. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 308Z
Sensation and Perception.

In this course the importance of sensory systems in interpreting (perception) as well as receiving (sensation) information about the external world will be considered. The psychophysical study of the five human senses will be complemented by behavioural and neurophysiological studies in animals. General principles of sensory function and their inter-relationships will be stressed. Lectures: 3 hours per week, two terms. (6 credits)

PSYCHOLOGY 310Z
Learning.

The course is a study of behaviour in terms of the principles of conditioning and learning. The first half of the course is concerned with the basic issues central to conditioning and learning. In the second half the emphasis is on human learning. Lectures: 3 hours per week for two terms. Lab: To be scheduled during regular classes. (6 credits)

PSYCHOLOGY 311A
Psychology in Action: Developments in the Science and Application of Psychology.

"Psychology is a heterogeneous science". This fact is represented by subdividing the American Psychological Association into 30 divisions of interest. The origins of each psychology speciality will be determined and the changes leading to the actual nature of each psychology field will be covered. There will be a seminar/lecture format. Lectures: 3 hours per week, first term. (3 credits)

PSYCHOLOGY 313A
Anatomical & Physiological Bases of Motivation & Emotion I

An introduction to the gross structure and physiological functions of the central nervous system in relationship to behaviour. Consideration will be given to phylogenetic development, sensory and motor systems, and functional disorders of brain damage. This course is a prerequisite for Psychology 315B. Lectures: 3 hours per week, first term. (3 credits)

PSYCHOLOGY 315B
Anatomical & Physiological Bases of Motivation & Emotion II

Prerequisite: Psychology 313A. A study of determinants: neural, hormonal, stimulus, experiential of behavior. Emphasis will be on factors which account for the initiation, direction, and regulation of behavior. Animal and human research data underlying major psychological theories of motivated behaviors will be emphasized. Lectures: 3 hours per week, second term. (3 credits)

PSYCHOLOGY 400Z
History of Psychology.

Prerequisite: Psychology 300Z, 301B, 303A. A survey of the historical antecedents of modern theoretical and applied psychologies with application of the historical perspective to understanding the twentieth century systems of psychology and some contemporary theories, methods, issues and trends within the discipline. The course is given in seminar style with at least one written paper. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 401A
Statistics II

Prerequisite: Psychology 301B, 303A. Material presented in this course will include: "chi-square" and "F distributions", the "fixed effects" models for analysis of variance, regression and correlation. "Chi-square" tests and non-parametric tests of hypotheses. This material is intended to provide both a theoretical and a practical foundation in statistics for the student interested in conducting or utilizing the results of psychological research. Lectures: 3 hours per week, first term. (3 credits)

PSYCHOLOGY 402Z
Social Psychology

Prerequisite: Psychology 300Z. An introduction to the methodology, concepts, and research in some areas of contemporary social psychology. Group dynamics such as coalition formation, group problem-solving, communication networks, and leadership will be considered along with social influences such as interpersonal perception, conformity, attitude development and change and aggression. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 403B
Research Methods II.

Prerequisite: Psychology 301B, 303A, 401A. This course is a continuation of Research Methods I. This part of Research Methods will be devoted to a critical examination of more complex experimental designs used in Psychology. Students will be required to design, conduct, and evaluate experiments, and an opportunity will be provided for independent research. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term. (3 credits)

PSYCHOLOGY 404Z
Practicum in Early Childhood Development.

Prerequisite: Psychology 300Z, 304Z. This course combines an intensive study of development in early childhood with practical experience in a pre-school. In addition to one class meeting per week, each student must be able to commit himself or herself to three hours per week of observation and work as a teacher's aide in the college-related day nursery. After an introductory study of nursery school philosophy and observational methods, weekly seminars and readings will focus on aspects of child development which are observable in the nursery school, such as motor development, language, play, social interaction, concept formation, use of art and play materials, behaviour in routine situations, etc. The course assumes previous course work in developmental psychology or its equivalent. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 406Z
Community Psychology.

Prerequisite: Psychology 300Z. This course will relate psychology to the problems of man-in-society and consider basic areas of psychological knowledge as they bear upon the behaviour of man-in-institutions: that is, the strategies that man used to create a habitat which in turn determines his development. The contributions of psychology to community leadership in the search for new and better personal, social, cultural and ecological arrangements will be considered as they relate to such institutions as industry, education and the health, welfare and political structures. Lectures and seminars: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 408Z
Human Information Processing.

Prerequisite: Psychology 300Z. Examines the

way in which sensory input is transformed, recognized, stored, recovered and used. The course looks at pattern and speech recognition, memory and attention, decision making and reasoning in the context of recent experimental and theoretical work. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 410A
Measurement.

Prerequisite: Psychology 300Z, 301B, 303A. This course will define fundamental, derived and "pointer" measurement in science; and will examine the nature of psychological tests as "pointer" measures. The notion of "uniqueness" of a scale will be defined and related to the feasibility of performing arithmetic operations on measurement scores. Lectures: 3 hours per week, first term. (3 credits)

PSYCHOLOGY 410B
Scaling.

Prerequisite: Psychology 300Z, 301B, 303A. This course is designed to introduce the student to theory and methods, i.e., fractionation and equisection methods, etc. This course will appeal to those students interested in attitude measurement and test construction. Lectures: 3 hours per week for one term. Lab: Possibly seminars and/or labs. (3 credits)

PSYCHOLOGY 412Z
Animal Behavior.

Prerequisite: Psychology 300Z. The study of animal behaviour, its description, function and causes from a comparative bio-psychological point of view. Lectures: 3 hours per week for two terms. Possibly seminars and/or labs scheduled during regular lecture periods. (6 credits)

PSYCHOLOGY 414Z
Physiological Psychology.

Prerequisite: Psychology 300Z, 301B, 303A. A study of some biochemical and physiological mechanisms underlying behaviour. The topics studied include enzymes, nucleic acids, the nervous endocrine and sensory systems, response mechanisms, emotions, etc. A good background in biology, though not required, is strongly recommended. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 415B
Psychology of Time.

Prerequisite: Psychology 300Z. A basic framework for behaviour is time. A review of psychological studies of time from the beginning of the scientific study of psychology will be undertaken. Experiments and theory will be considered in the frames of reference of biological, psychophysical, psychoanalytic, and social-psychology. An experiment which may replicate a previous study will be carried out. Lectures: 3 hours per week, second term. (3 credits)

PSYCHOLOGY 417A
The Psychology of Communication and Language.

This course will deal with nonverbal communication systems among infrahuman and human organisms. Primary emphasis, however, will be laid upon language which will be treated in terms of its structures and functions. Topics chosen from among language acquisition, theories of meaning and the use of language, types of language classification, language and socialization and other cognitive dimensions of language. Lectures/seminars: 3 hours per week first term. (3 credits)

PSYCHOLOGY 419B
Psycholinguistics.

This course will begin by introducing the student to the general ideal of "a grammar" and will then proceed to the following topics:
(a) Constituent Structure and Transformational Grammars,
(b) Cognitive Implications of Transformational Grammars,
(c) The Concept of a "Morpheme" and its Meaning, and
(d) Phonetics, Phonemics and Speech.
Lectures: 3 hours per week, second term. (3 credits)

PSYCHOLOGY 500Z
Honours Thesis.

This course will require the Honours student to propose and complete a research thesis according to the APA format. The student's work will be supervised by a Thesis Chairman, selected from within the department by the student, and at least one additional member of the departmental staff selected jointly by the Thesis Chairman and the student. Required of all third year Honours students and open to Qualified Majors who have completed Psychology 300, 301, 303, 401 and 403, and who have permission of faculty. (6 credits)

PSYCHOLOGY 502Z
Honours Seminar.

This course will consist of a sequence of topical lectures or discussions conducted by the departmental staff. Topics will be of a contemporary nature, and will focus on current research. (6 credits)

PSYCHOLOGY 504Z
Mathematical Theories of Behaviour.

Prerequisite: Psychology 300Z, 301B, 303A, 401A, 403B or instructor's permission. This course is intended to demonstrate how mathematical concepts and techniques, are employed in the formulation of psychological theories. Theories of simple learning, perception, decision-making and reasoning will be examined. The course presupposes no particular background in mathematics and will be taught at a level of mathematical sophistication determined by the skills that students bring to it. It is a course that may be of interest to the general student of science, or the psychology student seriously concerned with problems in theoretical psychology. Lectures: 3 hours per week for two terms. (6 credits)

PSYCHOLOGY 506Z
Directed Readings.

This course is designed for the exceptional, advanced psychology student (3rd year Major and Honours only) who wishes to do independent literature research on a specific topic in psychology. This research will culminate in a written paper. Students should have a well defined research topic before they register for this course. Final acceptance to this course is subject to department approval. Seminars to be scheduled individually. (6 credits)

PSYCHOLOGY 508Z
Community Psychology Practicum.

Prerequisite: Psychology 406Z. The student will operate as an enabler or technical assistant to a community action agency applying community psychology principles. He will develop and maintain an information system or equivalent programatic activity for his host agency and be descriptively evaluated by his agency as well as by the professor. Lectures: 3 hours per week for two terms. (6 credits)

51.22 Department of Sociology

Associate Professor and Chairman
J. F. TASCONE

Associate Professor and Vice-Chairman
G. J. DEWEY

Assistant Professors
G. CHASIN
S. DRYSDALE
E. GAVAKI
D. GRAFSTEIN
S. HLOPHE
H. HORWICH
K. KUSANO
C. LIPSIG
J. TRESIERRA

Lecturer
M. DHAOUADI

51.22.1 PROGRAMMES

60	BA Honours in Sociology
	Year I
6	Soc 310Z[6] [see § 51.22.2 (A. & C.)]
12	Soc Elec [see § 51.22.2 (C, E & F)]
	Year II
6	Soc 400Z[6]
12	Soc Elec [see § 51.22.2 (G)]
	Year III
12	Soc 500Z[6], 550Z[6]
12	Soc Elec [see § 51.22.2 (H)]

42	Majors in Sociology
	Year I
6	Soc 310Z[6] [see § 51.22.2 (B & D)]
6	Soc Elec [see § 51.22.2 (D, E & F)]
	year II
6	Soc 400Z[6]
12	Soc Elec [see § 51.22.2 (G)]
	Year III
6	Soc 500Z[6]
6	Soc Elec [see § 51.22.2 (H)]

51.22.2 DEPARTMENT OF SOCIOLOGY

Sociology 300 or an equivalent introductory course in Sociology at CEGEP or elsewhere is the normal prerequisite for registration in *all* other sub areas of the fields for elective students as well as Honours and Majors. It will be waived *only* in genuinely exceptional cases with the consent of the Chairman and the Professor. One or more of the following guidelines will also be applied in decisions regarding the admission of a student to any given course in Sociology.

A. Honours who have completed an Introductory Sociology at CEGEP or elsewhere may register in Sociology 310 plus two Sociology 300 level electives in University I.

B. Majors who have completed an Introductory Sociology at CEGEP or elsewhere may register in Sociology 310 plus one Sociology 300 level elective in University I.

C. Honours who have not completed an Introductory Sociology at CEGEP or elsewhere should register in Sociology 300 and postpone 310 and 300 level electives in Sociology until University II.

D. Majors who have not completed an Introductory Sociology at CEGEP or elsewhere should register in Sociology 300 and delay Sociology 310 and 300 level electives in Sociology until University II.

E. For Sociology Honours and Majors without Introductory Sociology at CEGEP or elsewhere the recommended programme in University I would consist of Sociology 300 plus four general electives.

F. University I students are restricted to the Sociology 300 level courses in choosing their electives.

G. University II students may choose their electives in Sociology from those of the 300 and/or 400 level courses. Sociology 450 is *strongly* recommended, especially for Honours students.

H. University III students may choose their electives in Sociology from the 400 and/or 500 level courses. One cognate course may be included with departmental approval.

51.22.3 COURSE DESCRIPTIONS

SOCIOLOGY 300Z
Systematic Sociology

Prerequisites: None. A survey-type course which examines society in terms of social structures and social processes using the basic concepts of scientific sociology. Human behaviour is viewed as a dynamic, on-going process of social interaction, involving social organization, culture and personality. A number of substantive areas of social life are considered including the family, socialization, religion, stratification, social control and deviance, education, the economic system, political institutions etc. (6 credits)

SOCIOLOGY 302Z
Canadian Society

Prerequisites: Sociology 300. First part of the course will be spent developing a theoretical framework — the "hinterland-metropolis" perspective — which will be used to examine the dynamics of different "inter-groups" in Canada. This will be done within the context of three basic structures, economic, political and regional. The second part of the course will be concerned with applying this metropolis-hinterland framework to *two* specific areas from the following, multinational corporations and underdevelopment, agrarian protest movements, community studies in Canada, Canadian identity and regional disparity, native peoples, and third Party political movements in Canada. (6 credits)

SOCIOLOGY 304Z
Quebec Society

Prerequisites: Sociology 300. Is Quebec a region or a society? Within the context of the trend towards continental integration, this course studies the evolution of Quebec class structure and economic and social institutions from New France to the present. Throughout, the unifying theme is the interplay between external forces and internal developments, the relationship between Quebec and Greater North America. Of special importance is the development of the distinct rural and urban societites during the 19th century, their interdependence and the social conflict which accompanied their fusion during the 20th century. The impact of rapid urbanization on power relationships both within Quebec and between Quebec and English Canada follows. This course ends with an assessment of Quebec's potential as an independent society. (6 credits)

SOCIOLOGY 306Z
Socialization

Prerequisites: Sociology 300. An examination of the social and cultural processes by which the individual becomes a functioning member of society. Among the perspectives considered are the symbolic interactionist theories of Cooley and Mead, the psychological theories of Freud and Erikson, and the sociological theories of Parsons, Elkin, Clausen, Inkeles, Brim, Wheeler and others. Emphasis is also given to adult socialization and re-socialization in such diverse institutional contexts as the school, occupations and professions, hospitals, prisons, the army etc. The relation of social structure to role acquisition and role performance constitutes a major focus of the course. (6 credits)

SOCIOLOGY 308Z
Deviance, Crime and Delinquency

Prerequisites: Sociology 300. An examination of the nature, forms, sources, functions and dysfunctions of deviations from social order and control. Deviance is viewed as a social process of action, interaction and relationships that derive from the social structure and have consequence for it. Various forms of deviance, from extreme under-conformity to extreme over-conformity, are considered in terms of contemporary social theory and research with particular emphasis on crime and delinquency. (6 credits)

SOCIOLOGY 310Z
Classical Social Theory

Prerequisites: Sociology 300. Examination of the origins of sociology and of the sociological works of nineteenth and early twentieth century European theorists, with consideration of the social and political context. Particular emphasis will be given to the works of Durkheim, Marx and Weber. Reading will include primary sources and critical commentaries. Required of all Major and Honours students in Sociology. (6 credits)

SOCIOLOGY 312Z
Race and Ethnic Relations

Prerequisites: Sociology 300. Explores the emergence of contemporary ideas about skin colour and ethnic or national group sentiment as they re-shape the social landscape determining ways of individual and collective behaviour as well as self-perception. The course is designed to allow the students to more easily comprehend the ideas of race and culture through the exploration of discrimination, prejudice and intergroup accommodation and studies of the role of these ideas in other societies, at other historical periods, as well as our own society in present time. (6 credits)

SOCIOLOGY 314Z
Marriage and the Family

Prerequisites: Sociology 300. Sociological study of marriage and the family. Earlier phases of course will deal with personality formation within the family, dating and marriage, marital adjustment and problems in marriage generated by social change. Later phase of course will entail an analysis of the family as a basic social institution within a structural-functional framework. Patterns of interaction between family members and between the family and other institutions will be examined. Sources of strain and tension in such relationships will be discussed. (6 credits)

SOCIOLOGY 316Z
Economy and Society

Prerequisites: Sociology 300 or equivalent. Explores the relationship between the organization of man's economic life and the range of his social possibilities. The course focuses upon the emergence of types of market relationships and exchange systems and their relationship to broader socio-economic frameworks. (6 credits)

SOCIOLOGY 400Z
Methodology of Sociology

Prerequisites: Sociology 300 or the equivalent plus University II standing. A survey of problems and issues in the philosophy of social research, consideration of the relation between sociological theory and research and examination of the major methodologies in Sociology. (6 credits)

SOCIOLOGY 402Z
Social Psychology

Prerequisites: Sociology 300 plus University II standing. Human beings change as to their definitions of reality as they interact with others. In this course the focus will be on the reciprocal relationships between the individual and social matrix as they impinge upon each other. Concepts and theories regarding the self, personality, significant others, groups, attitudes etc., will be explored. (6 credits)

SOCIOLOGY 404Z
Sociology of Urban Regions

Prerequisites: Sociology 300 or the equivalent plus University II standing. The first semester will be devoted to the historical development of the city, focusing on an analysis of the pre-industrial

city from a cross-cultural perspective. The second semester will study the growth of urbanization in North America, concentrating on Canada and the social and spatial organization of Canadian cities. Focus will be on the problems that industrial Canada face, and an exploration of the course of these problems in the politico-economic organization of the nation. The ideologies of planning and urban renewal will be critically evaluated, especially as they are manifested in the functioning of the Montreal Urban Community. Finally an analysis of citizens' groups and community organization in Canadian cities will be offered. (6 credits)

SOCIOLOGY 406Z
Social Stratification

Prerequisites: Sociology 300 or the equivalent plus University II standing. An examination of the major stratification systems — caste, estate, class in their social and historical contexts. Consideration of various theoretical and empirical approaches to stratification with emphasis on contemporary societies. (6 credits)

SOCIOLOGY 408Z
Sociology of Knowledge

Prerequisites: Sociology 300 or the equivalent plus University II standing. Study of the relationship between ideas and social structure. Consideration of classic and modern sociological theories on the construction, maintenance, justification, subversion, and change of socially shared ideas about reality. Primary objective of the course will be the use of perspectives derived from sociology of knowledge in the analysis presently found in social, political, religious and economic contexts. (6 credits)

SOCIOLOGY 410Z
Social Movements in Quebec

Prerequisites: Sociology 300 or the equivalent plus University II standing. Analysis of major movements for social change that have developed historically in Quebec. Concentration on the rebellion for economic independence 1837; the Louis Riel affair; the anti-conscription movements Catholicism and the organizing of youth; the labour movement and the separatist movement. RIN through Quebec. (6 credits)

SOCIOLOGY 420Z
Social and Cultural Anthropology

Prerequisites: Sociology 300 or the equivalent plus University II standing. An analysis and description of the social structure, ritual, symbolism, kinship and political systems of Complex Societies. Special emphasis is laid on Afro-American Anthropology, the Native Peoples of Canada and African traditional political systems. Modern myths on the occult. Edward T. Hall's *Silent Language* and Edmund Carpenter's *Anthropologist in the Electronic World* also constitute an integral part of this course. (6 credits)

SOCIOLOGY 421A
Sociology of Economic Development

Prerequisites: Sociology 300 or the equivalent plus University II standing. A look at the theories and models of economic development with special reference to the metropolis-satellite model of multinational corporation monopoly capitalism. Developmental processes of foreign aid, Peace Corps and CUSO Volunteerism, the role of local political elites and self-reliance are critically analyzed as possible alternatives or obstacles to economic development. (3 credits)

SOCIOLOGY 423B
Population

Prerequisites: Sociology 300 or the equivalent plus University II standing. A theoretical approach to current issues related to the determinants and consequences of population structure and dynamics. Emphasis will be given to the relationship between economic development and population growth. (3 credits)

SOCIOLOGY 425A
Sociology of Religion

Prerequisites: Systematic Sociology 300 or the equivalent plus University II standing. Analysis of religious experience, beliefs, ritual, and organizations as social facts. Consideration of both traditional and contemporary religious institutions as sources of meanings and values which may either support or subvert ongoing social structures. Attention also given to how non-religious situations generate religious movements and reversely, how religious situations generate non-religious. (i.e. social, economic, political) movements. (3 credits)

SOCIOLOGY 427B
Sociology of Labour and Capital in Quebec

Prerequisites: Sociology 300 or the equivalent plus University II standing. Study of the development of the labour force, the evolution of workingmen's organizations, the clash between American and domestic unions; the evolution of the new working class; the relations between the state and the labour movement. (3 credits)

SOCIOLOGY 450Z
Sociological Statistics

Prerequisites: Sociology 300 or the equivalent plus University II standing. This course will deal principally with aspects of measurement in Sociology. The first part will be devoted to the discussion of descriptive statistics in terms of scaling techniques, measures of central tendency, dispersion, location, and numerical analysis of sociological data. The second part will cover inferential statistics. The principal topics to be discussed will be probability theory, sampling procedures, testing hypothesis and correlational analysis. (6 credits)

SOCIOLOGY 460A/B
Topical Seminar in Sociology

Prerequisites: Sociology 300 or the equivalent plus University II standing. Restricted to Sociology Majors and Honours. Seminar course focusing on special sociological topics or areas as designated by those instructors offering such seminars in a given year. For further information consult the Departmental Curriculum Addendum published in spring. (3 credits)

SOCIOLOGY 500Z
Contemporary Social Theory

Prerequisites: Sociology 300 or the equivalent plus University III standing. Critical examination of contemporary social theories against the background provided by Marx, Durkheim, Weber and the like. Major attention will be given to the critical assumptions, conceptual distinctions, methodological features and ethical implications of theories. Course will require extensive reading, critical papers and other assignments including class presentations. (6 credits)

SOCIOLOGY 502Z
Sociology of Work

Prerequisites: Sociology 300 or the equivalent plus University III standing. First semester — a macro analysis of the theory and practice of work as it has evolved in western society. Focus will be on tracing the change in the nature of work — the emergence of class, changes in work relationships, in the concepts of leadership, authority, and decision-making — as these are influenced by the emergence of the monopoly capitalist system. Second semester a micro analysis of the nature of work in North American Industrial Society, Special emphasis will be placed on comparing the Blue and White Coillar worlds of work. The key problems of alienation, automation and powerlessness will be explored. A survey of worker response to these problems will conclude the course. (6 credits)

SOCIOLOGY 504Z
Sociology of Economic Change in Quebec

Prerequisites: Sociology 300, 304, or the equivalent plus University III standing. Study of:

Quebec economic institutions as developing historically. Special emphasis on internal colonization and external dependence. To be focused on macro analysis. (6 credits)

SOCIOLOGY 506Z
Sociology of Women

Prerequisites: Sociology 300 or the equivalent plus University III standing. An examination of the status of women in North American society — especially regarding socialization, marriage and the family, education, religion and the law. Within an historical and comparative framework consideration will be given to the ideology of sexism, revolution, life cycles and socio-economic and ethnic dimensions as well as Woman's Liberation as a social movement. (6 credits)

SOCIOLOGY 521A
Sociology of Education

Prerequisites: Sociology 300 or the equivalent plus University III standing. An analysis of the social relationships emerging within a formal education system. The concept of education as a powerful tool for socialization and social control will be explored. Special emphasis will be placed on alternative approaches to the present formal structure, i.e., "living-learning", independent study etc. The phenomena of technology and depersonalization in education are also examined. (3 credits)

SOCIOLOGY 523B
Political Sociology

Prerequisites: Sociology 300 or the equivalent plus University III standing. Socio-economic and cultural determinants of political power and political behaviour in Canada will be analyzed. Of special interest will be those situations and epochs in which political behaviour and the institutions of political power are radically modified. An analysis of the new parties and extra-electoral protest movements which influence behavior and power will be important themes. (3 credits)

SOCIOLOGY 550Z
Honours Seminar and Essay

Prerequisites: Sociology 300 or the equivalent plus University III standing. A departmental seminar during the first term which will include discussion of methodological and theoretical concerns related to the formulation of the Honours proposals and presentation by students on topics related to their essay. Second term will involve completion of independent research and submission of the Honours Essay. Required of all Third Year Honours students. (6 credits)

SOCIOLOGY 558Z
Introduction to Social Work

Prerequisites: Sociology 300 or the equivalent plus University III standing. This course attempts to provide the student who is giving consideration to Social Work as a career an opportunity to finalize a decision by examining the nature and scope of this profession, its history and methods, and the basic elements of the casework process, namely, the study, diagnosis and treatment procedures. Also examined will be the role of community resources in the casework approach. (6 credits)

SOCIOLOGY 560A
Topical Seminar in Sociology

Prerequisites: Sociology 300 or the equivalent plus University III standing. Restricted to Sociology Majors and Honours. Seminar course focusing on special sociological topics or areas as designated by those instructors offering such seminars in a given year. For further information consult the Department Curriculum Addendum published in spring. (3 credits)

SOCIOLOGY 562Z
Topical Seminar in Capitalism and Underdevelopment in Africa and Latin America

Prerequisites: Sociology 300 or the equivalent plus University III standing. This course is an application of the theories of economic development to the African and Latin American experience with multi-national corporation domination of their economies, it raises the question of whether self-reliance (in the sense of Nyerere's "IJAMAA") is a more viable alternative to development for Africa and Latin America, rather than the creation of a local petty bourgeoisie of entrepreneurs. (6 credits)

51.23 Department of Theological Studies

Associate Professor and Chairman
J. HOFBECK

Associate Professors
W. BEDARD, O.F.M.
REV. R.W. BREEN
P. GARNET
S. E. McEVENUE
G. O'BRIEN, S.J.
S. O. WESOLOWSKY

Assistant Professors
P. R. MOROZUIK
C. B. PARIS
M. SPICER

51.23.1 PROGRAMMES

60 BA Honours in Theological Studies

Year I
18 Theo Elec
Year II
24 Theo Elec
Year III
18 Theo Elec

With the approval of the Department one of the required courses in Theological Studies can be replaced by a cognate course given in other departments.

42 BA Major in Theological Studies

Year I
12 Theo Elec
Year II
18 Theo Elec
Year III
12 Theo Elec

With the approval of the Department one of the required courses in Theological Studies can be replaced by a cognate course given in other departments.

51.23.2 DEPARTMENT OF THEOLOGICAL STUDIES

Joint Honours and Major programmes with other disciplines are also available.

Any course offered by the Department of Theological Studies may be taken by any qualified student as an Elective with the exception of Theology 601Z.

Since there is a particular career opportunity for qualified religion teachers at various Catholic school commissions, we advise interested students to enroll in a Double Major with the Department of Theological Studies.

Majors and other specialized students will choose their courses in consultation with the Department Chairman.

51.23.3 COURSE DESCRIPTIONS

COURSES OF GENERAL INTEREST

Contemporary Religious Problems

THEOLOGY 301A
Prayer as Seen in the Bible

The recent upsurge of religious experience from Pentecostalism to Eastern mystician shows modern man's deep interest in prayer. The course will explore this phenomenon in relation to the Biblical understanding of prayer. (3 credits)

THEOLOGY 302B
Prayer as Seen by Contemporary Theologians

It is noteworthy that contemporary theologians see prayer as a supremely important theological subject. Some of these authors will be studied, with particular reference to the different approaches represented respectively by Hans Urs von Balthasar and Karl Rahner. (3 credits)

THEOLOGY 303Z
From the Theology of Hope to the Theology of Play

After the dead end of the "Death of God" movement, we observe many refreshing positive new starts in theological thinking: theology of hope, political theology, theology of revolution, liberation theology, process theology, theology of play and theology of celebration. The principal representatives of these movements will be read in selection and questioned in the light of the biblical faith. (6 credits)

THEOLOGY 310Z
Contemporary Atheism

The Christian of today has to face an accelerated process of secularization and new forms of atheism. This course seeks to analyse the contemporary phenomenon of "atheism", to examine its roots, to raise the question of its positive meaning,

and to define a Christian attitude towards it. Through this dialogue with atheism we shall attempt to uncover the essentials of Christianity itself. (6 credits)

THEOLOGY 311Z
Christian Ethics

Through an analysis of the main present-day moral problems, and in confrontation with non-Christian and non-religious interpretations, we intend to elaborate the specific character of Christian ethics. Particular attention will be given to the necessary changes within any moral system. (6 credits)

THEOLOGY 313Z
Religious Experience in Contemporary Society.

An exploration of some of the less orthodox paths taken by modern man in his search for religious meaning. Presentations will be given by those involved in this search in a variety of ways. The course will also uncover historical precedents for modern religious manifestations in the Hindu, Buddhist, Jewish and Christian cultures. The occult and its appeal. Chemically-induced religious experience and its authenticity. Hasidic Judaism. Spiritualism. The "charismatic movement" in Christianity. Eastern mysticism in the West. (6 credits)

THEOLOGY 315Z
The Christian Mystical Tradition

A study of mystical experience in Christianity through the ages. The study will include not only an investigation of great representatives of mystical traditions but also an exploration of how ordinary Christians search for communion with God. (6 credits)

THEOLOGY 316A/B
Christianity and Marxism

This course will examine the basic premises by means of which Christians and Marxists believe and hope they can cope with the problem of personal and social human existence. An insight into the meaning of transcendence, theism-atheism, humanism, the future, freedom and creativity will be gained through the study of the development of the Marxist-Christian dialogue. The theology of hope will be explored as a possible answer to man's quest for meaning and purpose. (3 credits)

THEOLOGY 317A/B
Russian Religious Humanism

This course studies Dostoevsky, Tolstoy and Berdyaev with reflections upon the following dimensions of religious experience: God, human personality, nature of human existence, necessity of faith, the question of morality without God, creativity, freedom, suffering, existential harmony and the meaning and purpose of life. The ultimate purpose of this course as of Theology 318B is the examination of the anthropological world-view in its quest for self-understanding in order to open up avenues leading to the discovery and experience of God. (3 credits)

THEOLOGY 318A/B
Soviet Humanism and Religion

This course will explore the spiritual and human existential agony manifested in contemporary Soviet writers: Zamyatin, Dudintsev, Bulgakov, Pasternak and Solzhenitsyn. This exploration will serve as an insight into the possibility of whether humanity can or cannot exist without religious experience in the context of a socio-political negation of God. (3 credits)

THEOLOGY 319Z
Theology and Development

A study of the role that Christianity has played and has still to play in the development of the third world. The focus of this course will be one of the developing areas, e.g. Latin America, Africa Asia, depending on the interests and needs of the students. (6 credits)

THEOLOGY 324Z
Alternate Modes of Christian Commitment

A study in alternate modes of Christian living distinguished by a rigourous communal adherence to the evangelical counsels of poverty, chastity and obedience. Christian history speaks of these adherents as cenobites, monks, nuns, friars or clerks regular. The variety of this Christian experience and its inflence on the development of society will be the two main focal points. (6 credits)

THEOLOGY 325Z
Marriage

A study of the phenomena that express man's need for love and union. Marriage has traditionally been the most common symbol of this love and union answering a psychological, social and religious need. Questions are being asked concerning the necessity and permanence of marriage as a civil or religious institution. (6 credits)

THEOLOGY 331A
Twentieth Century Consciousness of God

A study of representative intellectuals of various religious denominations and in differing academic disciplines in relation to their challenges to traditional ongoing theological discourse. The pathos of the intellectual will be contrasted with the understanding faith of the theologian. The open-endedness of the Catholic faith will be discussed. (3 credits)

THEOLOGY 332B
Nineteenth Century Criticism of Christianity

The course entails: a) an introductory consideration of the Enlightenment and in particular, of Lessing as theologian; b) theological perspectives of Schleiermacher and Hegel; c) the theological reductions and cirticisms of Strauss, Feuerback, Marx, Kierkegaard and Nietzsche. (3 credits)

THEOLOGY 337Z
The Problem of Evil

An exploratory course that will treat, from a theological and philosophical perspective, the problem of evil both historically and thematically: historically by considering occurrences of various modes of speaking about evil; thematically, by considering the methodological issue involved in the legitimacy, relevance, and dynamics of such an enquiry. (6 credits)

INTERDISCIPLINARY EXPLORATIONS

THEOLOGY 340A
Theology and the Arts I: The Mythic Image

An examination of the classical media and art forms in music and painting, exploring the mythic and poetic foundations of theological discourse and its relation to the imagination of the artist. (3 credits)

THEOLOGY 341B
Theology and the Arts II: The Open-Eye

An exploration of the most recent media, art forms and underground films in order to see the "god metaphors" and, with a theological reflection, to become aware of the new allegory and the civilizing function of the God of the Imagination. (3 credits)

THEOLOGY 355Z
Ultimate Concern in North American Literature

Existential questions (the absurd, alienation, utopia, etc.) will be explored in a theological perspective, through the study of representative works of drama and fiction. (6 credits)

THEOLOGY 361Z
Theology and Politics

A study of the historical reciprocity between political structures and the theological expression of man's social and political existence. (6 credits)

THEOLOGY 364A
Theological Dimensions of Psychology I

The course is a theological exploration in psychological studies embracing: a) a critical and

constructive consideration of Freud and Jung; b) a survey of neo-Freudian social psychologists such as Horney and Sullivan; c) a survey of third force psychologists such as Rogers, Maslow and May. (3 credits)

THEOLOGY 365B
Theological Dimensions of Psychology II

This course consists of exploratory studies on main themes and fields of concern related to psychology and theology such as faith, anxiety, psychic projections, devil-beast, adulthood, and informed consciousness and transformation. Audio-visual methods and seminar sessions will be used. Individual projects and research on a tutorial basis will be encouraged. (3 credits)

THEOLOGY 370Z
Science and Religion

A study of representative classic and contemporary formulations of the nature of scientific and religious truth. This course will examine both the types and the bases of various claims made in the areas of science and religion. (6 credits)

RELIGIOUS DIVERSITY

THEOLOGY 377Z
Primitive Religions

A consideration of the basic religious attitudes and postures of primitive man and of the role of religion in his life. An attempt will be made to assess the contribution of the religion of primitive man to Christian theology. (6 credits)

THEOLOGY 379Z
Eastern Religions (Reading Course)

Introduction to the classical works of major Eastern Religions. (6 credits)

THEOLOGY 380A
World Religions I: Islam

This course intends to acquaint the student with the different stages of the Muslim Tradition and the characteristic features of the Islamic world-view. It combines a survey of Islam with an interpretation of the specific practices and articulations of the Muslim faith. Main areas discussed: Qur'an (Coran), Muhammad (The Prophet), Hadith (Prophetic Tradition), Shari'ah (Religious Law of Islam), Kalam (Muslim Theology), Sufism (Muslim Mysticism), Shi'ism (Islamic Heterodoxy), and Modern Socio-Religious Developments. (3 credits)

THEOLOGY 381B
World Religions II: Buddhism

This course intends to initiate the student into Buddhism as a world-view and Way of Life. A survey of its religio-historical and religio-geographical development will be combined with readings in Buddhist texts. The course follows the traditional Buddhist Tri-ratna structure, including: The Life of the Buddha, the Dharma (Buddhist Doctrine and Principles), and the Sangha (the Buddhist Community and its Schools). (3 credits)

THEOLOGY 385Z
Ancient Near Eastern Religions

The religions of ancient Mesoptamia, Egypt and the Levant during the bronze and early iron ages. This material provides our best documented examples of the religions of early civilized man and constitutes invaluable background material for the study of the religion of the Old Testament. (6 credits)

THEOLOGY 387Z
Contemporary North American Judaism

Its historical, philosophical and theological developments with special consideration given to twentieth-century patterns and problems. (6 credits)

THEOLOGY 389Z
Development of Protestant Tradition

Introduction to the major streams of Protestant Christianity, their origin and subsequent development. (6 credits)

THEOLOGY 393Z
Introduction to Orthodox Christianity

This course will explore the religious thought and religious experience of the segment of the Christian community known as Orthodox. This exploration will be conducted through the media of history, culture, and mystical theology. The historical, cultural and ethnic diversity of the Orthodox community and its status, problems, and future in the North American society will also be examined. Another perspective on Orthodox Christianity will be yielded through the study of its interrelationship with Catholicism and Protestantism and the resulting theological spiritual and ecumenical influences, mutually exerted. Thus the student can become aware of the forces shaping 20th-century Christianity. (6 credits)

THEOLOGY 398A
Catholicism from Trent to the French Revolution

The religious experience of Catholicism after the Protestant reform. The areas of concern will deal with the Council of Trent, the Spanish mystical reform, "L'Ecole Française", the Jesuits and Jansenism. (3 credits)

THEOLOGY 399B
Catholicism from the French Revolution to the Present

A search for the roots of the Catholic mentality in 19th and 20th century sources. The course will deal with Ultramontanism, Modernism, Papal social doctrine and the "aggiornamento" of John XXIII. (3 credits)

INTRODUCTORY COURSES

THEOLOGY 400Z
Introduction to the Old Testament

An introduction to the Old Testament experience of man with God in its various expressions (in the historical, prophetic, and wisdom literature). Emphasis will be given to the methods of Old Testament interpretation in its permanent significance for Christian thought. (6 credits)

THEOLOGY 410Z
Introduction to the New Testament

This course is designed to introduce the student to the methodology and the tools of New Testament interpretation as a whole. Particular emphasis will be given to the literary, historical, and doctrinal analysis of the Gospel of Mark. (6 credits)

THEOLOGY 430Z
Introduction to Systematic Theology

After an introduction to the realm, methods, tools, and sources of theology, the course intends to elaborate the overall dynamic structure of the dialogical existence of man with God, which is the horizon in which man and world obtain an intelligent and positive meaning. (6 credits)

THEOLOGY 450Z
Introduction to History of Christianity

An introduction to the historical dimension of Christian existence, of its structure, methods, major driving ideas and personalities within the different epochs. (6 credits).

THEOLOGY 470Z
Methods in the Study of Religion

This course will examine some of the main approaches to the study of religion, giving emphasis to the key problems and techniques of inquiry in these approaches, with special attention to the theological method in its distinctive Christian context. (6 credits)

THEOLOGY 472Z
Religious Language

A study of religious *and* theological language in relation to scientific, philosophical and symbolic forms of human self-expression. This course will examine different forms of creativity in religious language and of critical interpretation in theological language. (6 credits)

ADVANCED COURSES

Prerequisite: Successful completion of a corresponding 400 level course or its equivalent.

SCRIPTURE

THEOLOGY 501Z
The Pentateuch and the Historical Books

In the light of the present state of research the oral and written traditions of the Pentateuch and the Historical Books will be explored with a particular emphasis on the different kerygmatic and theological interests. (6 credits)

THEOLOGY 503A
The Prophetic Traditions

An introductory theological survey of the prophetic traditions in Israel's history: the origin, character and motive of this activity. Special attention will be given to the fundamental and unique role played by the individual prophets, through an arrangement of themes and structures. Special attention will be given to selected texts. (3 credits)

THEOLOGY 504B
The Psalms and Wisdom Literature

An introductory theological survey focusing on: 1) the Psalms: their conception and creation as man's prayer, a link in the history of God's revelations; and 2) the Wisdom movement: its development and its bearing on biblical theology. Special attention will be given to selected texts. (3 credits)

THEOLOGY 511A
The Synoptic Gospels

An introduction to the study of the gospels as sources for the life and teaching of Jesus. It will cover the history of the synoptic problem, critical approaches, and the results of investigations into the synoptic gospels for an understanding of Jesus of Nazareth Particular attention will be given to the Gospel of Luke. (3 credits)

THEOLOGY 512B
Acts and the Beginning of Christianity

Continuation of 511A (though it may be taken separately by permission of the Professor) concentrating upon the historiography of Luke and his description of the rise of Christianity as a separate group within Judaism. Attention will be paid to Luke's use of sources in the formulation of his theology, especially with respect to his Christology and Ecclesiology. (3 credits)

THEOLOGY 514Z
The Johannine Writings

An extended examination of Gospel, Letters and Revelation situated within the context of first-century Christian and non-Christian religious thought. (6 credits)

THEOLOGY 516Z
The Theology of St. Paul

An historical-critical examination of Paul's theological thought, tracing its development through the chronological sequence of his letters and also in the Acts of the Apostles. (6 credits)

THEOLOGY 518Z
New Testament Christologies

Seminar dealing critically and historically with key sections of the New Testament relating to the person of Jesus of Nazareth. Their background, sources, and Christological relevance will be examined. (6 credits)

SYSTEMATIC THEOLOGY

THEOLOGY 531Z
Theology of Revelation

This course will offer an inquiry into the concept of revelation as a central concept of fundamental theology and will deal with the questions of the possibility, knowability, and mystery of revelation. It will consider the contributions of representative theologians, both Catholic and Protestant, to the devlopment of the theology of revelation. (6 credits)

THEOLOGY 532Z
Theological Anthropology

This course will analyse the different interpretations and emphases given to the doctrine of man's existence in the image of God from a Christological and theological viewpoint. More recent insights in this field will be examined and an attempt will be made to outline the basic elements of a contemporary anthropology from a systematic theological perspective. (6 credits)

THEOLOGY 538Z
Problems of Eschatology

The seminar will investigate the relationship between history and eschatology, the problem of death, resurrection, millennium, etc., in order to update theology so as to be a challenge to the modern mind. (6 credits)

THEOLOGY 540Z
Theology of the Church

A study in the development of the self-understanding of the Church. (6 credits)

THEOLOGY 542A
Christology

This course is an inquiry into the mystery of the Incarnation. After a short survey of the biblical foundations and of the definitive establishment of the traditional Christological doctrine, more recent insights about the God-man Jesus-Christ will be proposed and critically evaluated. (3 credits)

THEOLOGY 543B
Theology of Redemption

This course will develop a contemporary understanding of the doctrine based on Christian revelation as it has been crystalized in the Bible and explained by historically unfolding doctrines of the Church. Three questions will be emphasized: From what have the world and man been redeemed? What is the outcome of redemption on the world and man? By whom and how is redemption performed? (3 credits)

THEOLOGY 551A
Recent Developments in Moral Theology

This course will focus on the Protestant and Catholic theologians who have in the recent past developed changes in the approaches to moral theology and to particular moral problems. (3 credits)

THEOLOGY 552B
Contemporary Moral Problems

A continuation of Theology 551 with particular emphasis on specific themes. (3 credits)

HISTORY OF CHRISTIANITY

THEOLOGY 562A
Post Apostolic Christianity (98-180 A.D.)
(3 credits)

THEOLOGY 562B
Christian Communities in the Third Century
(3 credits)

THEOLOGY 563A
Religion and Society in the Early Middle Ages

A study of theology and religion in the Europe of the 12th and 13th centuries, using the manifestations of popular piety as an introduction to the various developments of the period. (3 credits)

THEOLOGY 564B
Religion and Society in the Later Middle Ages

A study of Christianity in the 14th and 15th centuries. The rise of reform movements from within the Church will be studied as a means of understanding the theological and social situation of the period. (3 credits)

THEOLOGY 565Z
The Catholic and Protestant Reformations of the XVI Century

A historical and theological analysis of the events, personalities and ideas emerging from the religious upheaval of the XVI century. Emphasis will be placed on the parallel restructuring, rethinking and renewal that existed in both Catholic and Protestant communities. (6 credits)

THEOLOGY 567Z
History of Christianity: 20th Century

This course will discuss issues of contemporary Christianity; Modernism, theological revival, ecumenism, the contribution of the Second Vatican Council. (6 credits)

THEOLOGY 568A
Canadian Church History: Preconfederation

A survey of the persons, institutions, and religious thought that formed the mentality of the Christian Churches prior to Confederation. (3 credits)

THEOLOGY 569B
Canadian Church History: Postconfederation

A survey of the persons, institutions, and religious thought that formed the variety of mentalities in Canadian Christianity. (3 credits)

THEOLOGY 610Z
Honours and Majors Theology Tutorial

Open to Honours and Major Theology students. At the end of the second year, students choose, in consultation with a tutorial director, a research topic or other specialized work for an intense analysis during the final year. (6 credits)

THEOLOGY 630Z
Theological Re-Examination of Religious Education

In response to the growing criticism of Religious Education, this course will explore the traditional values and the most recent advances of Biblical, systematic moral and historical theology for an integral education at the elementary and high school levels. A variety of experts will lecture in weekly units on the various topics and levels. (6 credits)

THEOLOGY 632Z
Seminar in Religious Education

Theologians and teachers will deepen the theological content of course 630 according to the particular needs of the various levels of religion teaching through individual research and group discussion. The treatment of audio-visual media, textbooks, play forms, and new programmes will be evaluated from the theological point of view. (6 credits)

The following courses are university level courses which were offered in the year indicated but did not appear in the official Calendar.

THEOLOGICAL STUDIES
1966

Theology 410
The Pauline Epistles (6 credits)

1968
Theology 346
Vladimir Soloviev (6 credits)

THEOLOGICAL STUDIES
1969

Theology 329
Communism, Ideology and Christianity (6 credits)

Theology 344
Biblical Morality (6 credits)

Theology 378
Theology of Labour (6 credits)

61 Faculty of Commerce and Administration

61.1 Major Programmes

These tables describe the major programmes in the Faculty of Commerce and Administration, for Honours Programmes refer to Honours Requirements.

61.1.1 MAJOR PROGRAMMES SIR GEORGE WILLIAMS CAMPUS

Accountancy		**Economics**		**Finance**		**General Business**	
1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term
First Year		***First Year***		***First Year***		***First Year***	
Acc 213	Acc 214	Acc 213	Acc 214	Acc 213	Acc 214	Acc 213	Acc 214
Mark 213	Acc 218	Mark 213	Acc 218	Mark 213	Acc 218	Mark 213	Acc 218
QM 243	QM 244	QM 243	QM 244	QM 243	QM 244	QM 243	QM 244
Econ N-210	Econ N-209	Econ N-210	Econ N-209	Econ N-210	Econ N-209	Econ N-210	Econ N-209
Man 213*	Fin 215	Man 213*	Fin 215	Man 213*	Fin 215	Man 213*	Fin 215
Second Year		***Second Year***		***Second Year***		***Second Year***	
Man 340	Man 341	Man 340	Man 341	Man 340	Man 341	Man 340	Man 341
QM 313	QM 314	QM 313	QM 314	QM 313	QM 314	QM 313	QM 314
Fin 314	Mark 350	Fin 314	Mark 350	Fin 314	Mark 350	Fin 314	Mark 350
Comp Sc N-211**	Man 345	Comp Sc N-211**	Man 345	Comp Sc N-211**	Man 345	Comp Sc N-211**	Man 345
Acc 323	Acc 325	Econ N-311 or N-312	Econ N-311 or N-312	Econ Elec	Econ Elec	Elec***	Elec***
Third Year		***Third Year***		***Third Year***		***Third Year***	
Man 460	Man 461	Man 460	Man 461	Man 460	Man 461	Man 460	Man 461
Man 475	Acc 425	Man 475	Acc 425	Man 475	Acc 425	Man 475	Acc 425
Acc 441	Acc 421	Econ N-316 or N-318	Econ N-316 or N-318	Fin Elec	Fin Elec	Elec***	Elec***
Acc 432	Acc 433	Econ Hist	Econ Hist	Fin Elec	Fin Elec	Elec***	Elec***
Elec	Elec	Econ Elec	Econ Elec	Elec	Elec	Elec	Elec
Total Credits For Majors	90		90		90		90

Management		Marketing		Quantitative Methods	
1st term	2nd term	1st term	2nd term	1st term	2nd term
First Year		***First Year***		***First Year***	
Acc 213	Acc 214	Acc 213	Acc 214	Acc 213	Acc 214
Mark 213	Acc 218	Mark 213	Acc 218	Mark 213	Acc 218
QM 243	QM 244	QM 243	QM 244	QM 243	QM 244
Econ N-210	Econ N-209	Econ N-210	Econ N-209	Econ N-210	Econ N-209
Man 213*	Fin 215	Man 213*	Fin 215	Man 213*	Fin 215
Second Year		***Second Year***		***Second Year***	
Man 340	Man 341	Man 340	Man 341	Man 340	Man 341
QM 313	QM 314	QM 313	QM 314	QM 313	QM 314
Fin 314	Mark 350	Fin 314	Mark 350	Fin 314	Mark 350
Comp Sc N-211**	Man 345	Comp Sc N-211**	Man 345	Comp Sc QN-211**	Man 345
Man 368	Man 369	Mark Elec	Mark 352	QM 353	QM 354
Third Year		***Third Year***		***Third Year***	
Man 460	Man 461	Man 460	Man 461	Man 460	Man 461
Man 475	Acc 425	Man 475	Acc 425	Man 475	Acc 425
Man 466	Man 467	Mark Elec	Mark 490	QM 425	QM Elec
Man Elec	Man Elec	Mark Elec	Mark Elec	QM Elec	QM Elec
Elec	Elec	Elec	Elec	Elec	Elec
90		90		90	

*Students who have not obtained exemption or credits for Management 214 will be required to take that course as one of their electives provided they have an open elective in their programme.

**If a student has exemptions, it is recommended that this course be taken in the first year.

***For a major in General Business, these electives must consist of two courses (six credits) in any three of the following five disciplines: Accountancy, Finance, Management, Marketing, Quantitative Methods.

61.1.2 MAJOR PROGRAMMES LOYOLA CAMPUS

Accountancy		Accountancy & Business Administration		Business Administration		Computer Science	
1st term	2nd term	1st term	2nd term	1st term	2nd term	1st term	2nd term
First Year		***First Year***		***First Year***		***First Year***	
Acc 213	Acc 214	Acc 213	Acc 214	Acc 213	Acc 214	Acc 213	Acc 214
QM 243	QM 244	QM 243	QM 244	QM 243	QM 244	QM 243	QM 244
Elec	Elec	Elec	Elec	Elec	Elec	Comp Sc 211A	Comp Sc 223B
Elec	Elec	Elec	Elec	Elec	Elec	Commerce Elec	Commerce Elec
Elec*	Elec*	Elec*	Elec*	Elec*	Elec*	Elec	Elec
Second Year		***Second Year***		***Second Year***		***Second Year***	
Acc 217	Acc 323	Acc 217	Acc 323	Acc 217	Acc 218	Acc 217	Acc 218
Acc 324	Acc 325	Mark 213	Mark 350	Mark 213	Mark 350	Fin 215	Fin 314
Fin 215	Fin 314	Acc 324	Acc 325	Fin 215	Fin 314	Comp Sc 311A	Comp Sc 313B
Elec	Elec	Fin 215	Fin 314	Man 313	Man 315	Comp Sc 451A	Comp Sc 555B
Elec	Elec	Man 313	Man 315	Elec	Elec	Commerce Elec	Commerce Elec
Third Year		***Third Year***		***Third Year***		***Third Year***	
Acc 403	Acc 407	Acc 403	Acc 407	Bus Elec	Bus Elec	QM 313	QM 314
Acc 441	Acc 442	Acc 441	Acc 442	Bus Elec	Bus Elec	Comp Sc 523A	Comp Sc 521B
Acc 429	Acc 432	Acc 429	Acc 432	Elec	Elec	Comp Sc Elec	Comp Sc 525B
Man 475	Man 476	Man 475	Man 476	Elec	Elec	Comp Sc Elec	Comp Sc Elec
Elec	Elec	Elec	Elec	Elec	Elec	Elec	Elec
Total credits For Majors	90		90		90		90

Computer Science and Business Administration		Economics	
1st term	2nd term	1st term	2nd term
First Year		***First Year***	
Acc 213	Acc 214	Acc 213	Acc 214
QM 243	QM 244	Econ 309***	Econ 311***
Comp Sc 311A**	Comp Sc 313B**	Econ 322	Econ 322
Man 313	Man 315	Elec	Elec
Elec	Elec	Elec	Elec
Second Year		***Second Year***	
Acc 217	Acc 218	Acc 217	Acc 218
Mark 213	Mark 350	Econ 404	Econ 404
Fin 215	Fin 314	Fin 215	Fin 314
Comp Sc 241A	Comp Sc 451B	Econ	Econ
Comp Sc Elec	Comp Sc Elec	Econ****	Econ****
Third Year		***Third Year***	
QM 313	QM 314	Econ****	Econ****
Comp Sc 523A	Comp Sc 523B	Econ****	Econ****
Comp Sc 561A	Comp Sc 563B	Econ	Econ
Comp Sc Elec	Comp Sc 525B	Bus Elec	Bus Elec
Commerce Elec	Commerce Elec	Elec	Elec
	90		90

*It is highly recommended that at least one of the electives be taken in Computer Science

**Prerequisites: Comp Sc 221A and 223B

***Economics 300 is a prerequisite for all Economics courses except Econ 304

****For a BComm (Honours Econ) this course must be a 600 level

NOTE: It is expected that all students entering their first university year will have taken the equivalents to Economics 300, Math 101 and QM 208/209. If not they will be required to make up these deficiencies.

61.2 Commerce & Administration

Dean
ANDREW BERCZI

Associate Dean (Loyola Campus)
LAWRENCE BOYLE

Assistant Dean — Administrative Affairs
HARVEY MANN

Assistant Dean — Student Affairs
ROLAND O. WILLS

Director, Business Administration Programme — Loyola Campus
BRUCE ENGLISH

Associate Chairman of Accountancy Loyola Campus
DAVID MacDONALD

Members of the Commerce & Administration Consultative Committee are listed in § 61.17

61.3 Admissions Requirements

General admission requirements are listed in § 13

Specific requirements for admission to the Faculty of Commerce & Administration for students in CEGEP are two semester courses in mathematics — College Algebra and Introduction to Calculus. Arrangements will be made in the first-year programme to give special instruction to those students who lack adequate mathematical preparation.

61.4 Bachelor of Commerce Programme

Concordia University offers two distinct Bachelor of Commerce programmes, one on the Sir George Williams campus and the other on the Loyola campus, for 1975-76.

61.4.1 SIR GEORGE WILLIAMS CAMPUS

This faculty is engaged in the education of students for business life. It is our intention to graduate students liberally educated about business. To accomplish this we have designed a multi-disciplinary and inter-disciplinary curriculum which is intellectually challenging.

The first year of the programme is intended to provide an informative accumulation of operational attitudes, skills and tools which form the base for the core concentration.

The core concentration in the second year attempts to give broad experience in all phases of business in a co-ordinated, analytical and reflective period of study. All the resources of the student's intellectual ability are combined with his inter-disciplinary studies to analyze, formulate, judge, and solve challenging business situations.

The last year of the programme is intended to provide the student with an opportunity to immerse himself in an area of specialized study. In addition, the student participates in a course which is designed to test his ability to integrate his knowledge and to view the study of business as a whole.

In view of this design all students must follow the sequence of courses on the basis of an academic year as outlined in the curriculum. No student will be permitted to register for second or third year courses without having completed the courses of the first academic year.

Exceptions may be authorized in writing for valid reasons by the Dean or the Assistant Dean — Student Affairs.

Degree Requirements

To obtain the degree of Bachelor of Commerce, all students are required to follow either a major or an honours programme. Ninety credits are required for a major or honours. Students registered prior to June 1, 1974 refer to New Credit Programme (Transition).

Major and honours programmes are available in each of the following areas:

Accountancy
Economics
Finance
General Business
Management
Marketing
Quantitative Methods

To graduate with a major requires successful completion of all prescribed courses, while graduation with honours requires, in addition, a high level of academic performance. The regulations governing qualifications for an honours degree are given under the Honours Programme.

Students will indicate their preferred field of concentration, either major or honours, at the time of application for entry. It should be noted, however, that since the programme of study of the first year is common to all programmes, students may change to another programme, provided, of course, that the capacity of the programme permits it.

The table § 61.1.1 gives complete details of the requirements of each programme.

New Credit Programme (Transition)

The Senate has approved a change in the Bachelor of Commerce programme reducing the credit requirements from 102 to 90 credits. This new 90 credit programme became effective June 1st, 1974 and the following is a brief summary of the implementation schedule.

1. All students (Day and Evening) first entering the Bachelor of Commerce programme after June 1st, 1974 will register in the new 90 credit programme.

2. Students who entered the Day Division in September 1973 will take a transitional programme of 96 credits. This 96 credit programme will consist of the new 90 credit programme plus 2 courses of any of the following four (3 credit) courses:

Management 214
Management 215
Management 346
Management 476

3. Students who entered the Day Division prior to September 1973 will complete the 102 credit programme in which they are currently registered.

4. Students enrolled in the Evening Division will be categorized according to the number of credits obtained by May 1973:

a) Students who have completed 60 credits, i.e. 20 half courses (or their equivalent) by May 1973 will be required to complete the "old" programme in which they are currently registered.

b) Students who had less than 60 credits on May 31st, 1973 will be allowed to transfer into the new 90 credit programme.

NOTE: The student is responsible for following the correct sequence of courses required for the completion of a particular programme.

Honours Programme

The university has approved programmes leading to an honours degree in certain selected fields. An honours degree indicates specialization within a field, and high academic standing. In order to quality for an honours degree a student must meet all of the academic qualifications and comply with the regulations set forth below.

1. A candidate for an honours degree should indicate such intention at registration and consult the honours representative of the department(s) concerned as soon as possible. Acceptance as an honours student will depend on performance during the first year. The honours standing will be reviewed annually.

A student who has followed the courses prescribed for the honours programme and has met all the requirements may enter the programme with the approval of the honours representative any time before beginning the final five courses. No retroactive approval of entry may be made.

2. A student who enters with advanced standing may apply pro tanto credits which are applicable to the honours degree requirements, upon approval by the department(s).

A transfer student must complete a minimum of thirty credits in the basic honours programme in residence to receive a degree with honours.

3. An honours student must maintain a 'B' average with no grade lower than 'C' in all courses in the basic honours programme.

An honours student must meet the general degree requirements as well as the specific requirements for an honours degree, and must obtain at least a 'C' average over the total degree programme.

Failure in any course will mean suspension or withdrawal from the honours programme. Students who fail to meet acceptance requirements or who are required to withdraw from the honours programme will proceed as majors. Reinstatement into the honours programme is possible only by recommendation by the honours representative.

4. A student shall be allowed to qualify for only one honours degree in either a single or combined honours programme.

5. A degree with honours in any programme is granted upon graduation only with the approval of the Senate.

Accountancy

The following courses constitute an honours programme in Accountancy, provided the student maintains the required academic standing:

First Year: Accountancy 213, 214 and 218, Finance 215; Management 213.

Second Year: Accountancy 323, 325, Finance 314; Management 340; Quantitative Methods 313 and 314.

Third Year: Accountancy 421, 425, 432, 433 and 441; Quantitative Methods, 423 and 424.

Business

The following courses constitute an honours programme in Business, provided the student maintains the required academic standing:

First Year: Accountancy 218, Finance 215; Management 213 and 214; Marketing 213.

Second Year: Quantitative Methods 313 and 314; Marketing 350; Finance 314.

Third Year: Accountancy 425; Management 460 and 461; six credits at the '400' level of any three of: Accountancy, Finance, Management, Marketing, Quantitative Methods.

Economics

The following courses constitute an honours programme in Economics, provided the student maintains the required academic standing.

Pattern C (for students in the Faculty of Commerce and Administration)

NOTE: Students who have not completed six credits in calculus prior to their admission to this programme must make up the deficiency.

Economics N-209 and N-210 or N-212 (213); N-311 (411) or N-312 (413); N-318 (452); N-415 (421); Accountancy 213; 214 Quantitative Methods 243; 244; One economic history course chosen from among: Economics, N-430 (420), N-434 (424), N-438 (428); Finance 215, 314.

Finance

The following courses constitute an honours programme in Finance, provided the student maintains the required academic standing:

First Year: Accountancy 213, 214 and 218; Finance 215.

Second Year: Quantitative Methods, 313 and 314; Finance 314; Economics N-311 or N-316.

Third Year: Accountancy 425. Any six (6) of the following: Finance 417, 418, 430, 431, 440, 441, 452, 455, 460, 461.

In addition students must take Economics N-209 and N-210 or N-212 or the equivalent.

Management

The following courses constitute an honours programme in Management, provided the student maintains the required academic standing:

First Year: Finance 215; Management 213.

Second Year: Management 340, 341, 345, 346, 368 and 369; Marketing 350; Quantitative Methods 313 and 314.

Third Year: Management 460, 461, 466, 467, 475 and 476 plus any two of the following: Management 462, 463, 464 and 465.

Marketing

The following courses constitute an honours programme in Marketing, provided the student maintains the required academic standing:

First Year: Accountancy 218; Finance 215; Management 213; Marketing 213.

Second Year: Quantitative Methods 313 and 314; Marketing 350 and 352; plus one of Marketing 402, 403, 452, 453, 454, 463 or 464.

Third Year: Accountancy 425, Management 476, Marketing 490 and any four of: Marketing 402, 403, 452, 453, 454, 462, 463 or 464.

In addition, students must take Economics N-209 and N-210 or N-212 or the equivalent.

Quantitative Methods

The following courses constitute an honours programme in Quantitative Methods, provided the student maintains the required academic standing:

First Year: Accountancy 213, 214 and 218, Finance 215; Quantitative Methods 243 and 244.

Second Year: Quantitative Methods 313, 314, 353 and 354; Finance 314; Computer Science N-211.

Third Year: Accountancy 425; Quantitative Methods 425 and 426; any four of: Quantitative Methods 415, 423, 424, 433, 445, 446.

Failures

Students are cautioned that a failure in a first term course will prohibit them from proceeding to a second term course for which the first is a prerequisite. Students who find themselves in this position have two alternatives available:

1. They may drop the second term course and register in a section of the failed course, if available.

2. They may drop the second term course and apply to write the supplemental examination (in March for potential graduates and in July for others) if they are eligible to do so. In this case, students may register in another course for which they have the necessary prerequisite.

There will be a course change period at the beginning of the second term at which time students falling in the above categories must make arrangements with the Office of the Registrar for the necessary course changes.

French Language

The business community, as well as governments, now express a preference for university graduates who are bilingual. We, therefore, advise all students to take advantage of the opportunities available during their years at this university to ensure that they are bilingual when they present themselves for employment upon graduation.

Courses/Non Commerce Students

Students not registered in the Faculty of Commerce & Administration, who wish to undertake any courses offered by the faculty, but do not have the stated prerequisites, must obtain permission in writing from the chairman of the department concerned, *prior to registration.*

61.4.2 LOYOLA CAMPUS

The Bachelor of Commerce Programme is designed to develop problem-solvers and decision-makers in all walks of life.

A successful graduate is able to develop objectives and strategies, organize people and resources, direct an organization's activities and control these activities, and appraise objectives and strategies in the light of results.

The programme has been made flexible enough to allow a student to develop according to his own needs.

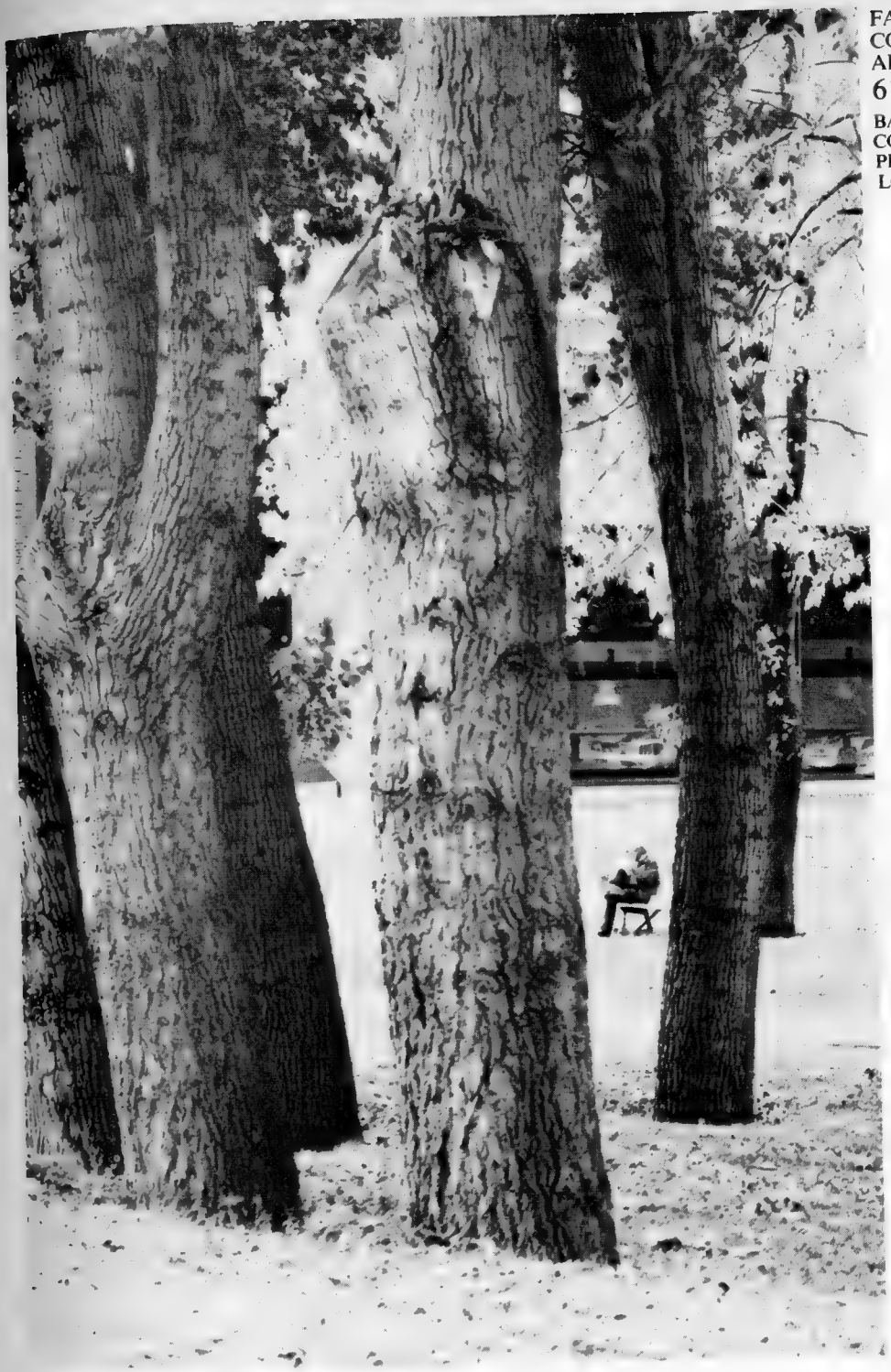
Although a student is required to specialize in either Accountancy, Business Administration, Computer Science or Economics, the degree also includes exposure to the humanities and social sciences.

In the new three-year university programme a student must have a minimum of ninety recognized academic credits to receive the degree. To graduate with a Bachelor of Commerce degree with a Major in Accountancy, Business Administration, Computer Science or Economics, a student must satisfy the requirements for the degree and obtain an average of 65% in all required courses in the chosen major. (For details of programme requirements see § 61.1.2.) If a student fails to maintain this average, or fails any of the courses in the major, he can graduate with a general Bachelor of Commerce degree.

Students in the Honours Programme in Economics must maintain a yearly average of 65% and not less than 65% in any course in that field of concentration.

Commerce Courses for Non-Commerce Students

Students enrolled in other faculties may take Commerce courses which fall into their area of personal interest. These courses receive full credit in their own faculty when



taken as permitted elective courses.

With the exception of Operations Analysis (Quantitative Methods 313 and 314), courses available to non-Commerce students require neither a mathematics background nor prerequisites. In fact the Commerce programme itself is not heavily mathematics-oriented, although courses requiring a background in mathematics are offered in certain areas.

If you require assistance in choosing a course which would be of value to you in your future career, members of the Commerce faculty are always available for discussion.

Students are urged to consult with the Associate Dean of Commerce or the Chairman of the Department in which they wish to concentrate, before registration.

61.5 Accountancy

Professor and Chairman of the Department
J. G. FINNIE

Associate Professor and Associate Chairman of the Department
D. MacDONALD

Professor
L. BESSNER

Associate Professors
G. R. CURNEW
A. DICKIE
F. P. DOUGHERTY
H. MANN
E. B. MARKLAND
H. RIPSTEIN

Assistant Professors
H. DAUDERIS
W. E. PIETZSCH
A. VASIL

Lecturers
P. DECELLES
C. DRAIMIN
T. LUKIAN

Sessional Lecturer
H. LIEBMAN

Visiting Associate Professor
H. DOMIGAN

61.5.1 COURSES DESCRIPTIONS

ACCOUNTANCY 213
Financial I

This course examines the theory and practice involved in recording and reporting an organization's financial information for interested parties. It includes the preparation and analysis of financial statements. This course is required for all Commerce students and is recommended for non-Commerce students, particularly those considering graduate studies in business administration. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 214
Financial II

Prerequisite: Accountancy 213. Extending the coverage of Accountancy 213, this course examines in detail valuation procedures and accounting principles as they relate to the components of financial statements. It includes the analysis of financial statements and the study of funds flow. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 217
Financial and Managerial

Prerequisite: Accountancy 214. This course is designed to develop, through verbal analysis of business cases, an understanding and skill in the preparation of statements for financial accounting purposes taking into account the needs of business management. The student must be able to analyze these statements and comment critically thereon. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 218
Managerial I

Prerequisite: Sir George Williams Campus Accountancy 213. Loyola Campus Accountancy 214. This course is an introduction to the development of accounting information for purposes of control, decision making and the more efficient operation of the enterprise. (3 credits) *NOTE A/See § 200.2*

ACCOUNTING 220 (120)
An Accounting Approach to Management

This course is designed to cover certain major aspects of management related to the accounting process. These include: business organization; accounting concepts; financial statement analysis; management uses of accounting information; and, the effect of taxation on business decisions. (3 credits). *NOTE A/See § 200.2; Commerce and Administration students may not take this course for credits.*

ACCOUNTANCY 221 (121)
Accounting and Management

Prerequisite: Accountancy 220. This course is sequential to Accountancy 220, and examines in greater depth the areas covered in that course. (3 credits). *NOTE A/See § 200.2; Commerce and Administration students may not take this course for credits.*

ACCOUNTANCY 323
Intermediate

Prerequisite: Sir George Williams Campus: Accountancy 214 and 218. Loyola Campus: Accountancy 214. This course extends, at a senior level, the material covered in earlier courses, integrating the previous work with advanced theory and application. Intensive study is made of the theory and practice of external reporting by commercial and other entities. Concepts and procedures involved in the valuation of resources and obligations are studied, as are the concepts of income determination. (3 credits). *NOTE A/See § 200.2*

ACCOUNTANCY 324
Specialized

Prerequisite: Accountancy 214. An examination is made of specialized aspects of financial accounting. (3 credits). *NOTE A/See § 200.2*

ACCOUNTANCY 325
Advanced

Prerequisite: Sir George Williams Campus: Accountancy 323. Loyola Campus: Accountancy 214. This advanced course is primarily concerned with corporate combinations. A study is made of other advanced accounting areas. (3 credits). *NOTE A/See § 200.2*

ACCOUNTANCY 403
Cost and Management Accounting

Prerequisite: Accountancy 323. This course.

based primarily on lectures and problem-solving, is directed to the needs of students who contemplate careers in professional accounting as members of recognized accounting bodies. A detailed examination is made of the various techniques, systems and procedures applicable to the managerial use of accounting information for decision-making, profit-planning and control. (3 credits). *NOTE A/See § 200.2*

ACCOUNTANCY 407
Accounting Practice and Policy

Prerequisite: Accountancy 323.

Corequisite: Accountancy 324/325 and Accountancy 429/432. If any of the related courses have not been taken previously, they must be taken simultaneously. This course, based almost exclusively on the case method of instruction, is of particular relevance to students who contemplate professional accounting careers as members of recognized accounting bodies. Areas previously or concurrently covered in the field of corporate financial reporting are extended, and current accounting literature and current pronouncements of professional accounting bodies are examined. Course objectives include further development of theoretical concepts through which appropriate solutions to practical problems may be derived, and the development of accounting policies to meet given and general situations. (3 credits). *NOTE A/See § 200.2.*

ACCOUNTANCY 414
Information Systems and Control

Prerequisite: Accountancy 403. This course includes information systems theory, control theory and practice, responsibility accounting, and a survey of selected management science techniques. Through case analysis and discussions, the interrelationships between information and control systems, managerial style and human behaviour are established. (3 credits). *NOTE A/See § 200.2.*

ACCOUNTANCY 421
Cost Accounting (Introductory)

Prerequisite: Accountancy 323. This course provides a knowledge of the fundamentals of cost accounting together with the latest procedures and cost accounting systems. (3 credits). *NOTE A/See § 200.2.*

ACCOUNTANCY 422
Cost Accounting (Advanced)

Prerequisite: Accountancy 421. This course continues at an advanced level the study of modern cost accounting systems; and emphasizes the contemporary problems facing cost accountants, and their potential solutions by the use of sophisticated techniques. (3 credits). *NOTE A/See § 200.2.*

ACCOUNTANCY 425
Managerial II

Prerequisites: Accountancy 214 and 218. This course is an introduction to systems theory as applied to the development of information for use by management (3 credits) *NOTE A/See § 220.2*

ACCOUNTANCY 429
Analytical Auditing

Prerequisite: Accountancy 325. This course introduces auditing theory and its application by external and internal auditors in fulfilling their respective objectives and responsibilities. The focus is on the audit of transactions or procedures used by organizations. An analytical approach is used to discuss different accounting systems and to evaluate systems of internal control. The development and use of detailed audit procedures and audit programs is also covered. Cases and problem solving form the basis of student involvement in this course. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 432
Financial Auditing

Prerequisite: Accountancy 325. This course emphasizes the role of the public accountant in expressing an opinion on the financial statements of an organization. The use of audit standards, procedures and internal control is related to the expression of an auditor's opinion. Cases and problem solving from the basis of student involvement in this course. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 433
Auditing and Investigation

Prerequisite: Accountancy 432. This course deals with questions related to professional accounting practices and also covers different types of management services that auditors are frequently requested to undertake. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 441
Taxation I

Prerequisite: Sir George Williams Campus: Accountancy 214. Loyola Campus: Accountancy 323. This course examines the Canadian taxation structure. Emphasis is given to the income taxes levied on individuals, and includes the taxation of capital gains, employment, business and investment income. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 442
Taxation II

Prerequisite: Accountancy 441. This course extends the coverage of Accountancy 441 with a detailed examination of taxes on corporate incomes, and of corporate distributions. Sales taxes, succession duties and other tax areas are also examined. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 451
Computer Auditing

Prerequisites: Computer Science N-211 and Accountancy 432. This course explores the impact of large scale computer use on the auditor and his examination of a company's records and system of internal control. The emphasis is on helping the auditor understand when a computer can be used to assist him and how to follow through with its use. Topics covered include the different controls and techniques required in a computer system, the audit trail, approaches to computer auditing and computer application for auditing, computer and software security, and consideration of the various computerized audit packages available. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 461
Accounting Theory

Prerequisite: Accountancy 325. This course examines the framework underlying current accounting thinking and procedures, and a study is made of the development and the influence of professional accounting organizations and regulatory bodies on accounting theory. Controversial areas are emphasized. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 470
Special Topics in Accounting

Prerequisite: Departmental approval. Intended to complement and supplement accounting courses taken previously or currently at the senior level, this course emphasizes accounting literature and modern thought. Students are encouraged to work independently on research topics of interest to them. Enrolment is restricted and is subject to departmental approval. (3 credits) *NOTE A/See § 200.2*

ACCOUNTANCY 471
Accounting Seminar

Prerequisite: Accountancy 470. This course examines in greater depth areas of individual interest. Enrolment is restricted and is subject to departmental approval. (3 credits) *NOTE A/See § 200.2*

61.6 Administration

ADMINISTRATION 201 (101)

Introduction to Administration

This course is designed to develop a basic understanding of the role of administration in our society (the efficient organization and employment of people in the techno-structure). (3 credits) *NOTE: Commerce and Administration students may not take this course for credits.*

ADMINISTRATION 202 (102)

Perspective on Business

This course is designed to review the historical development of business (in Canada in particular) and to examine the relationships between the firm (management) and the owners, the employees, the customers, the government and the community. Further, it studies some of the problems facing Canadian business today: the dehumanizing aspect, pollution problems, large vs. small firms, foreign ownership, competition, etc. (3 credits) *NOTE: Commerce and Administration students may not take this course for credits.*

ADMINISTRATION 350

Transportation

This course will deal with economic principles underlying the various modes of transport: i.e. rail, water, motor, air and pipeline. Current problems of each will be discussed. In addition, a survey of the principles of business logistics will be covered. Cases will be utilized when possible. (3 credits) *NOTE A/See § 200.2*

COMPUTER SCIENCE 221
Introduction to Business Computing

Computer development and classification. Input-Output devices, terminals and communications. The operation of the central processing unit and of the standard primary and secondary storage devices. Flow charts and decision tables. An introduction to assembler and high-level languages. The organization, staffing and control of information processing within a business firm. Students who have credit for Computer Science 211 or 301 may not take this course for additional credit. Text: E. Awad, *Automatic Data Processing*. 3rd edition (3 credits)

COMPUTER SCIENCE 223
Data Processing Techniques

Prerequisites: Computer Science 221. Continuation of Computer Science 221, covering the equipment and methods used in data processing, to give the student as wide as possible an acquaintance with computers of all makes and models, communications and terminal equipment, and special input and output devices. The basic methods for collecting, verifying, preparing and disseminating information will be studied. Elementary programs in the BASIC language will be written and run by the students through the local time-sharing service. Text: E. Awad, *Automatic Data Processing*. 3rd edition. (3 credits)

COMPUTER SCIENCE 241
Elementary Fortran Programming

Prerequisite: Computer Science 211, 221 or 301. The basic rules of the FORTRAN language, to enable students to use computers for work in applied mathematics, statistics, accounting, actuarial or operational research applications. Regular assignments will be given, to be prepared, run, tested and documented by each student individually. Text: Cress, Dirksen & Graham, *FORTRAN IV with WATFOR and WATFIV* (3 credits)

COMPUTER SCIENCE 311
Elementary Cobol Programming

Prerequisite: Computer Science 223. Covers the use of problem-oriented languages, an introduction to business data processing, the concept of files and records, program logic and flowcharting. Introduction to the elementary coding rules of the Common Business Oriented Language (COBOL), with examples to be run on the computer. Top-down programming design and structured programming concepts will be emphasized. The work load is typically 4 to 10 hours per week outside of class. (3 credits)

COMPUTER SCIENCE 313
Business Applications of COBOL

Prerequisite: Computer Science 311. Covers elementary file organization and design, decision tables and logic diagrams, computer aspects of systems design, and examples of computer-oriented business systems. There will be a study and report on an actual commercial application. (3 credits)

COMPUTER SCIENCE 417
Commercial Software I

Prerequisite: Computer Science 313. A study of a representative sample of the software program packages available commercially for use in business applications, including systems packages such as file management, payroll, inventory, and bill-of-materials; and control packages such as critical path scheduling, linear programming, and simulation. Sources of software; criteria for evaluating and choosing packages; implementation, maintenance and modification of packages. Class and individual projects on the use of typical packages. (3 credits)

COMPUTER SCIENCE 419
Commercial Software II

Prerequisite: Computer Science 417. Continuation of Computer Science 417. (3 credits)

COMPUTER SCIENCE 421
Advanced Cobol Programming

Prerequisite: Computer Science 311. Continuation of Computer Science 311. Further work on decision tables and flow-charting. IBM's Job Control Language, various operating systems and core dumps. The use of Cobol verbs for searching, sorting, and reporting. The use of subscripts, labels and completion codes. Programs will be written and tested on the computer, involving the creation and updating of files. Top-down program design, structured programming, and chief-programmer team concepts will be emphasized. Work load is typically 4 to 10 hours per week outside of class. Lectures: 3 hours per week. (3 credits)

COMPUTER SCIENCE 423
Assembler Language Programming I

Prerequisite: Computer Science 311 or 341. The general rules of the IBM 360/370 Assembler Language, with assignments to be run and documented by the student. Given in the Loyola Faculty of Arts and Science. (3 credits)

COMPUTER SCIENCE 427
Assembler Language Programming II

Prerequisite: Computer Science 423. Continuation of IBM Assembler. Assemblers for other computers and minicomputers. Given in the Loyola Faculty of Arts and Science. (3 credits)

COMPUTER SCIENCE 425
Mathematical Models of Real Systems

Prerequisite: Computer Science 241 or 311, and Mathematics 233 or Quantitative Methods 244. The use of a computer to study situations occurring in the real world, with examples taken chiefly from science and industry. How models are used to study interactions between the parts of a system, to analyse the causes of observed effects, and to predict the effects of changed conditions. The scale, detail and boundaries of a model. The cyclic process of model development. Types of models available — deterministic, probabilistic, macroscopic or microscopic, optimizing. Computer methods for modelling and simulation. (3 credits)

COMPUTER SCIENCE 429
Teleprocessing

Prerequisite: Computer Science 233. The study of remote control of computers by human operators or by other computers. The following topics will be covered: the categories of data transmission systems, channel capacities, communication line characteristics, modems, coding systems, transmission modes, transmission errors, various types of dialogue between man and computer, networks, terminals and control units, programs and software. Text: J. Martin, *Introduction to Teleprocessing*. (3 credits)

COMPUTER SCIENCE 451
File Structures

Prerequisite: Computer Science 241 or 313. A basic theoretical course in data handling. Linear lists, linked lists, orthogonal lists, trees and rings. Basic algorithms for searching, sorting, posting and updating files. The choice of proper file structure and medium for various applications. Control of job flow by the operating system in a multiprogramming computer. Directories, inverted lists, and Boolean searches for large information files. (3 credits)

COMPUTER SCIENCE 521
Data Processing Management

Prerequisite: Computer Science 313. The theory and practice of management as applied in commercial data processing. Planning for new business systems and computers; the feasibility study; the computer as an aid in planning; the organization of a data centre; staffing the data centre; job description and job specifications; maintenance and security; control methods for operation, data entry, processing and output. (3 credits)

COMPUTER SCIENCE 523
Business System Analysis

Prerequisite: Computer Science 313 and Accounting 214. This course considers data processing from the point of view of systems personnel. Study areas are: (1) the uses, characteristics, and limitations of computers in business; (2) system components (cybernetic view); (3) methodology and techniques of systems analysis; (4) MIS; (5) the human factor. Class projects will cover the study of various simple applications of data-processing systems, from the original concept to the production and operation of the system. (3 credits)

COMPUTER SCIENCE 525
Business Systems Design

Prerequisite: Computer Science 523. A continuation of Computer Science 523. A study of the principles of data-processing system design, ensuring timely, complete and accurate data collection, efficient processing, effective dissemination of information, and the evaluation, modification and control of the system. This will be illustrated by group projects and case studies. (3 credits)

COMPUTER SCIENCE 555
Information Systems

Prerequisite: Computer Science 451. A continuation of Computer Science 451, covering the problems of organization, storage, search and retrieval of information stored in large data bases. Dictionary construction and look-up, automatic indexing methods, search and matching procedures, information dissemination systems, commercial data-base management systems and application. Methods of user interaction and their application in management and decision-making. (3 credits)

COMPUTER SCIENCE 561
Computer Science Seminar and Project I

Prerequisite: Consent of the Department. Individual work on a computer science project under the supervision of a faculty member, and a series of seminars dealing with topics of current interest by faculty members, students and industry representatives. At least 60 hours of work must be

Computer Science Seminar and Project II

Prerequisite: Computer Science 561. A continuation of the project begun in Computer Science 561 for an additional 3 credits.

The following courses may also be taken as Computer electives on the Loyola campus:

done on a project approved in advance, including the submission of a technical report. Special arrangements can be made with the Department to accept a project carried out by a student employed in a commercial firm. (3 credits)

COMPUTER SCIENCE 563
Loyola Faculty of Arts and Science (§ 51.8.3)
COMP SC 341, 343, 424, 433, 533, 551
Faculty of Engineering (§ 71.10.4)
E-135, E-168

61.8 Economics

61.8.1 LOYOLA CAMPUS

For a more detailed description of these courses refer to § 51.9.3

Economics 300Z
Principles of Economics

Economics 302Z
Principles of Economics

Economics 304Z
Economic History

Economics 307B
The Chinese Economy

Economics 309A
Intermediate Micro-Economic Theory

Economics 311B
Intermediate Macro-Economic Theory

Economics 322Z
Mathematics for Economists

Economics 338Z
Contemporary Economic Issues

Economics 401A
Theories of Economic Growth

Economics 403B
Planning for Economic Growth

Economics 404Z
Statistical Methods

Economics 405B
Economic Fluctuations

Economics 407A
Money and Banking

Economics 411A
Economics of Transportation and Communications

Economics 434Z
Comparative Economic Systems

Economics 438Z
Labour Economics

Economics 448Z
Industrial Relations

Economics 504Z
Economic Development of Canada

Economics 507A
International Trade

Economics 509B
International Finance

Economics 535B
Public Finance

Economics 538Z
Regional Economics

Economics 540Z
Economics of Social Welfare

Economics 545A
Structure of the Economy and Public Policy

Economics 563B
Economics of Socialism

Economics 611A
Welfare Economics

Economics 655B
Advanced Statistical Methods

Economics 662Z
History of Economic Thought

Economics 665A
Advanced Micro-Economic Analysis

Economics 667B
Advanced Monetary and Income Theory

Economics 671A
Operations Analysis

Economics 681B
Advanced Macro-Economic Analysis

Economics 691
Honours Thesis

61.8.2 SIR GEORGE WILLIAMS CAMPUS

For a more detailed description of these courses refer to § 41.21.2.

Economics N-209 (209)
Introduction to Microeconomics

Economics N-210 (210)
Introduction to Macroeconomics

Economics N-221 (221)
Introduction to Economic History

Economics N-270 (281)
Mathematics for Economists I

Economics N-271 (282)
Mathematics for Economists II

Economics N-274 (218)
The Use of Economic Data

Economics N-304 (431)
Canadian Economic Policy I

Economics N-305 (432)
Canadian Economic Policy II

Economics N-311 (411)
Intermediate Microeconomic Theory

Economics N-316 (451)
Money and Banking

Economics N-318 (452)
Intermediate Macroeconomic Theory

Economics N-375 (375)
Introduction to Statistics for Economists

Economics N-411 (412)
Advanced Microeconomic Theory

Economics N-412 (484)
Mathematical Economics I

Economics N-413 (485)
Mathematical Economics II

Economics N-415 (421)
History of Economic Thought

Economics N-418 (453)
Advanced Macroeconomic Theory

Economics N-420 (454)
Economics of the Public Sector

Economics N-422 (461)
International Economic Relations

Economics N-423 (462)
Theory of International Trade

Economics N-426 (426)
Urban Economics

Economics N-427 (427)
Regional Economics

Economics N-428 (472)
Labour Economics

Economics N-429 (471)
Industrial Relations

Economics N-430 (420)
Economic History of Modern Europe

Economics N-434 (424)
Economic History of Canada

Economics N-438 (428)
Economic History and Development of the United States

Economics N-440 (422)
Economic Development

Economics N-442 (488)
Quantitative Development Economics I

Economics N-443 (489)
Quantitative Development Economics II

Economics N-446 (423)
The Economic Development of Quebec

Economics N-460 (445)
Contemporary Economic Systems

Economics N-464 (444)
Marxian Economics

Economics N-465 (443)
Soviet Economics

Economics N-468 (447)
Theory and Practice of Cooperation

Economics N-470 (480)
Mathematics for Economists III

Economics N-471 (481)
Mathematics for Economists IV

Economics N-476 (482)
Econometrics I

Economics N-477 (483)
Econometrics II

Economics N-490 (491)
Study in a Special Subject

Economics N-491 (492)
Study in a Special Subject

Economics N-493 (493)
Advanced Study in a Special Subject

Economics N-494 (494)
Advanced Study in a Special Subject

61.9 Finance

Professor and Chairman of the Department
C. C. POTTER

Associate Professors
L. BOYLE
M. KAWAJA
A. R. ILANO

Assistant Professors
J. BART
B. ENGLISH
L. KRYZANOWSKI
Y. GEYIKDAGI
S. SILVERTON
J. TOMASKI

Lecturers
T. BARNES
J. FLYNN

Special Lecturer
W. T. G. HACKETT

61.9.1 COURSE DESCRIPTIONS

FINANCE 215
Introduction to Finance
Prerequisites: Sir George Williams Campus: Economics N210 or equivalent, Accountancy 214 previously or concurrently, and Accountancy 216 previously or concurrently. Loyola Campus Accountancy 214, Economics 300. This is a survey of the behaviour of money and capital markets, financial standards and forecasting, the theory of interest, capital expenditure decisions and long-term financing instruments. (3 credits). *NOTE A/See* § 200.2.

FINANCE 314
Financial Management
Prerequisites: Sir George Williams Campus: Finance 215 and Economics N209 or equivalent. Loyola Campus Accountancy 214, Economics 300. A course of current asset management, short and intermediate term financing, financial structure and valuation, dividend policy, mergers, acquisitions, failures and reorganizations. (3 credits). *NOTE A/See* § 200.2.

FINANCE 315
Financial Management
Prerequisites: Finance 314. A survey of the behaviour of money and capital markets, long-term financing instruments, cost of capital, and capital expenditure decisions. (3 credits). *NOTE A/See* § 200.2.

FINANCE 417
Capital Budgeting Theory
Prerequisite: Finance 314. An examination of the criteria for efficient investments and optimum financial budgeting. (3 credits). *NOTE A/See* § 200.2.

FINANCE 418
Cost Benefit Analysis
Prerequisite: Finance 314. Private and public resource investment and associated problems. (3 credits). *NOTE A/See* § 200.2.

FINANCE 430
Financial Management I
Prerequisite: Finance 314. A study of the role and responsibility of the senior financial officer in the achievement of current control through operational finance. A variety of case studies is used to encourage the student to develop a critical appreach to the subject. (3 credits). *NOTE A/See* § 200.2.

FINANCE 431
Financial Management II
Prerequisite: Finance 314 and 430. A study of the role and responsibility of the senior financial officer in the achievement of 'current control' and 'performance review' through operational finance, etc. (3 credits). *NOTE A/See* § 200.2.

FINANCE 440
Finance Theory I
Prerequisite: Finance 314. This course will be a study of asset and liability management under conditions of uncertainty. Topics included are: concept of finance, capital and interest, theory of risk and time preferences, capitalization of the income stream, corporate growth and rate of return and captal structure mix. (3 credits). *NOTE A/See* § 200.2.

FINANCE 441
Finance Theory II
Prerequisites: Finance 314 and 440. This course will be a continuation of Finance 440 covering such topics as: dividends and the value of the corporation, cost of capital, game theory and liquidity. (3 credits). *NOTE A/See* § 200.2.

FINANCE 452
Investment Analysis
Prerequisite: Finance 314. The examination of the workings of security markets and analytical techniques for the valuation of securities and the appraisal of portfolio management. (3 credits). *NOTE A/See* § 200.2.

FINANCE 453
Investment Management
A study of diversification and portfolio management technique. (3 credits). *NOTE A/See* § 200.2.

FINANCE 455
Seminar in Finance
Prerequisite: Finance 314. This course is intended primarily for honours or majors students and provides an opportunity for more intensive study in one or more specific topics of finance. The topic will vary according to the special interests of the professor and the students. (3 credits). *NOTE A/See* § 200.2.

FINANCE 460
Financial Intermediaries (National)
Prerequisite: Finance 314. Principles of money and credit in their application to the operations of the central bank, chartered banks, and the financial system and markets generally. (3 credits). *NOTE A/See* § 200.2.

FINANCE 461
Financial Intermediaries (Quebec)
Prerequisites: Finance 314. A study of the operation of financial institutions in the province of Quebec. (3 credits). *NOTE A/See* § 200.2.

61.10 Management

Associate Professor and Chairman of the Department
S. P. ROBBINS

Professor
G. BRINK
J. KELLY
J. SMOLA

Associate Professors
M. FRANKLIN
T. KUBICEK
P. E. PITSILADIS
G. S. RAJAN
S. TUTSCH

Assistant Professors
J. P. BRUNET
J. GOODWIN
G. JOHNS
D. McPHILLIPS
A. SANDERS

Lecturers
W. BOYCHUK
R. OPPENHEIMER

Sessional Lecturers
J. B. FISHER
S. ROTHSTEIN

Special Lecturer
D. FRANKLIN

Visiting Assistant Professor
R. L. CRAWFORD

61.10.1 COURSE DESCRIPTIONS

MANAGEMENT 211
Business Law

A general survey of the law obtaining in the Province of Quebec with special emphasis on the aspects thereof relating to business and commerce. It includes a basic outline of the law of Domicile, Marriage, Persons, Property, Ownership and its modifications, Successions, Gifts and Wills, Testamentary, Executors, Contracts, Quasi-Contracts, Offences and Quasi-Offences, Privileges, Hypothecs and Prescription, and a more detailed study of the Contracts of Sale, Lease and Hire of Things and of Work, Mandate, Loan, Deposit, Partnership, Suretyship, Pledge, Insurance and an outline of the basic law applying to Negotiable Instruments, Corporations, Carriers, Bankruptcy and Winding Up, and Copyrights, Patents and Trade Marks. (6 credits). *NOTE A/See § 200.2; Commerce and Administration students may not take this course for credits.*

MANAGEMENT 213
Foundation of Behavior I

The purpose of this course is to introduce the student to psychological concepts relevant to the study of organizational problems. Topics include: personality, interpersonal behaviour, group behaviour, perception, attitudes and motivation. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 214
Foundations of Behaviour II

The purpose of this course is to introduce the student to sociological concepts relevant to the study of organizational problems. The chief concepts to be studied are: role, status, intergroup behaviour, social institutions and culture. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 215
Research Methodology

This course attempts to give the student an awareness and understanding of the possibilities and limitations of using research methods in a business setting. Topics to be discussed include: the scientific method, experimental design, observational techniques, sources of information and writing the research report. (3 credits)

MANAGEMENT 313
Human Behaviour I

The objective of this course is to examine the basic components of individual, inter-personal, group and intergroup behaviour. Cases will be used to apply these theories to actual business situations. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 315
Human Behaviour II

Pre-requisite: Management 313. An extension of Management 313, this course will apply the theory learned to areas such as inter-departmental conflict, staffing and industrial relations, as well as investigating such topics as management theory and management by objectives. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 340
Organizational Behaviour I

Prerequisite: Management 213 or 214 or equivalent. The general purpose of Organizational Behaviour I and II is to provide the student with the opportunity to use the concepts, findings and techniques of previous behaviour courses as a basis to study organizations as socio-technical systems. This is a laboratory course in which students are expected to improve their perceptual, analytical and problem solving skills. There are three goals:

a) to gain an understanding of group processes through role playing and sensitivity training;
b) to practice diagnosing organizational problems through analysis of cases;
c) to acquire skill in using diagnosis to plan and influence organizational changes. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 341
Organizational Behaviour II

Prerequisite: Management 340. This course will concentrate on the treatment of an organi-

zation as a socio-technical system. The central theme will be the measurement of organization effectiveness and its dysfunctions. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 345
Production Management

Prerequisite: Quantitative Methods 244. The problems of design, selection and planning of operating systems are studied. Operating systems are broadly defined to include manufacturing as well as service organizations. Topics included are: forecasting, plant and warehouse location, facility location and maintenance. (3 credits)*NOTE A/See § 200.2*

MANAGEMENT 346
Scheduling and Control of Production Systems

Prerequisite: Management 345. Operational problems of operating systems are studied. Topics included are: inventory management, scheduling of intermittent and continuous production, production line balancing, quality control, project management. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 368
Social Aspects of Enterprise

Prerequisite: Second year standing in any faculty. The purpose of this course is to facilitate understanding of the impact of social, economic, political and ethical environment on the process of managerial decision-making. Consideration is given to the conceptual foundations of business including the business corporation, its function and the legitimacy of its power structure. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 369
Canadian Business and its Environment

Prerequisite: Management 368. The purpose of this course is to examine the functioning of Canadian business and its relationships with its public, including stock-holders, consumers, employees, labour, community and government. Major contemporary issues such as the impact of technology on people and the physical environment are examined. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 401
Organizational Development

Prerequisites: Management 313/315 with a 'B' average or departmental approval. The purpose of this course is to extend the Management 313/315 course into very specific areas of concern for the total organization. The course will concern itself with the effective utilization of an organization's human resources. It will specifically deal with alternative ways of managing (management styles) management systems (e.g. M.B.O., Job Postings, etc.), labour relations, job enrichment and Organizational Development strategies. (3 credits)*NOTE A/See § 200.2*

MANAGEMENT 405
Human Relations

Prerequisite: Minimum of 'C' grade in Management 313 and Management 315, or professor's approval. The objective of this course is to increase the student's awareness and development of his interpersonal abilities. The course will include student-prepared seminars in which current topics in the area will be discussed, lectures, and one or more major role-playing exercises. Some latitude will be given to students in making final decisions on course content and pedagogy. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 407
Administration of the Firm

Contingency view of administration, viewed through the functions of planning, organizing, leading and evaluating. Integrates normative and descriptive models of administration within the firm. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 409
Principles of Insurance

This course examines the growth of insurance companies in Canada and their effect upon the economy. In addition, the basic fundamentals of insurance are covered, including such topics as life insurance, income replacement, annuities, group insurance, pensions, social insurance, liability, auto, fire and theft insurance. Practical applications and uses of insurance dealing with both personal and business situations will be noted. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 460
Business Policy I

Prerequisites: Finance 314, Marketing 213, Management 341 and 345. This course, together with Business Policy II, is a terminal course designed to integrate the learning of the three-year programme. The emphasis will be on the process by which top management defines products, designates markets, and market segments together with the channels through which they are to be resolved, determines the means by which they are to be reached, and the means by which operations are to be financed, as well as the size and kind of organization which is to achieve these activities — the process of strategy formulation by the organization. The purpose of instruction is to develop in students a global view of the organization rather than a specialist, departmental orientation. Cases will be used extensively, and drawn from widely diversified industries. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 461
Business Policy II

Prerequisite: Management 460. This course will concentrate on how the strategy formulated in Business Policy I will be implemented by the organization. Organization structures will be studied in differing environments. The relationships between organization structures and the organization's strategy will be analyzed. The problems encountered by general managers as well as middle managers, in the process of the implementation of the set policies will be studied. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 462
Personnel Management I

Prerequisite: Management 341. The aim of this course is to provide a sound background in fundamentals, theory, principles and practice of personnel management. It will focus on the philosophies underlying current personnel policy and practices. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 463
Personnel Management II

Prerequisite: Management 462. The emphasis in this course will be on techniques: recruitement, selection, training, appraisal, and wage and salary administration. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 464
Labour and Industrial Relations I

Prerequisite: Management 340 and 341. Labour relations is a survey course designed to provide a practical and comprehensive approach to the state of labour-management relations in Canada. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 465
Collective Bargaining and Industrial Relations II

Prerequisite: Management 464. This course is designed to help the student to look at day-to-day problems connected with negotiation and administration of collective bargaining agreements. The course puts some stress on the behavioural aspects of industrial relations (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 466
Management Theory I

Prerequisites: Management 340 and 341. This is an introductory course in management theory in which the student will be expected to become thoroughly familiar with management literature, terminology and principles. To this end he will examine the classical, contemporary and emerg-

ing theories in order to establish a solid conceptual framework against which management problems and their solutions can be evaluated. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 467
Management Theory II

Prerequisite: Management 466. This course will attempt to further develop the conceptual framework which was established in Management Theory I. To this end it will examine selected management concepts and appraise their value in terms of their application to the actual practice of business. Issues such as the effect of innovation and technological change, managing the knowledge worker, organization planning and comparative management will be considered. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 475
Business Law

Prerequisites: Sir George Williams Campus: 3rd year standing in Faculty of Commerce & Administration, Loyola Campus: Approval of Director of Business Administration programme. The purpose of this course is to examine and correlate through a functional approach the essential nature, source and meaning of the principles and rules governing business activity, more particularly commercial contracts. A detailed examination of the Quebec provincial and Canadian federal laws relating to business transactions, including persons and property, ownership, contracts in general, and the special contracts of agency, lease of real estate and moveables, bills of exchange. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 476
Business Law

Prerequisite: Management 475. The purpose of this course is to examine the legal framework of the Canadian business organization and important areas of law relating thereto, including partnership and company law, securities regulations, loans and hypothecs, bankruptcy, insurance, carriers, anticombines, fair employment and consumer protection legislation. (3 credits) *NOTE A/See § 200.2*

MANAGEMENT 499
Special Topics in Administration

Enrollment is restricted and subject to departmental approval. Intended to complement and supplement business courses taken previously or concurrently this course emphasizes business literature and modern thought. Students are encouraged to work independently on research topics of interest to them. (3 credits) *NOTE A/See § 200.2*

61.11 Marketing

Associate Professor and Acting Chairman of the Department
G. R. CURNEW

Professor
B. MALLEN

Associate Professors
K. C. DHAWAN
P. KAWAJA
V. H. KIRPALANI
R. ROTENBERG

Assistant Professors
L. McGOWN
U. TODOROVIC

Lecturers
B. BARBIERI
P. TOBBER

Sessional Lecturers
J. BOCK
J. B. SCHACH

Special Lecturer
J. MOORE

61.11.1 COURSE DESCRIPTIONS

MARKETING 213
The Marketing Process (Introductory)

The course examines the nature of marketing and its role in society as well as the inter-relationships that are operative within the marketing process — both external as related to society and the consumer and internal as related to the organization of the marketing process within the firm. Many of the factors influencing these relationships are also examined. (3 credits) *NOTE A/See § 200.2*

MARKETING 350
Marketing Management

Prerequisites: Accountancy 214 and Marketing 213. An analytical course dealing with the concepts and practices used by managers in planning, establishing policies, and solving marketing problems. Each of the elements in the marketing mix as well as their inter-relationships are examined in detail. (3 credits). *NOTE A/See § 200.2.*

MARKETING 352
Buyer Behaviour

Prerequisites: Marketing 213, Management 213 or 214 and Quantitative Methods 243 and 244. This course analyzes the motivations, roles and behaviour of the industrial buyer and the consumer, how he and she are affected by economic, social and cultural influences, and how the marketer may model this behaviour for decision-making purposes. (3 credits). *NOTE A/See § 200.2.*

MARKETING 402
Marketing Research I (Methods)

Prerequisites: Marketing 350 and Quantitative Methods 244. The role of research in the marketing process, the role of models, and the development of measurement techniques are discussed. Emphasis is placed on the nature and scope of marketing research methods for obtaining internal and external data and on the steps and principles involved in gathering and analyzing data. The student is also briefly introduced to applications of marketing research. (3 credits). *NOTE A/See § 200.2.*

MARKETING 403
Marketing Communications

Prerequisite: Marketing 213. This course analyzes the process of communication from seller to buyer, the theories, strategies and roles of opinion formation, attitude change and persuasion, and the effects of different sources, media and messages upon both consumers and intermediate buyers. (3 credits). *NOTE A/See § 200.2.*

MARKETING 452
Marketing Research II (Application)

Prerequisite: Marketing 402. The application of marketing research to problem areas such as advertising, sales management and product strategy. Alternative research designs are applied to actual problems. (3 credits), *NOTE A/See § 200.2.*

MARKETING 453
Advertising and Sales Promotion Management

Prerequisite: Marketing 350. The course deals with the theory and practice of advertising and sales promotion. Through case studies, field trips and simulations the student learns how to analyze media and budgets, plan promotional campaigns, utilize research findings and evaluate advertising effectiveness. (3 credits) *NOTE A/See § 200.2*

MARKETING 454
Sales Management

Prerequisite: Marketing 350. The course deals with the theoretical and applied aspects of the management of personal selling. Through cases, simulations and special presentations the student learns how to recruit, select, train, organize, motivate, evaluate, compensate, supervise and control the sales forces. (3 credits) *NOTE A/See § 200.2*

MARKETING 462
Multinational Marketing Management

Prerequisite: Marketing 350. In this course the student analyzes the major forms of international marketing; the impact of differing environments upon marketing policies and strategies; the segmentation of multinational markets; the development of international channel systems; the roles of marketing in developing countries, in communist countries and in integrated markets and trade blocs. (3 credits). *NOTE A/See § 200.2.*

MARKETING 463
Retail Management

Prerequisite: Marketing 213. This course seeks to apply the theories of marketing and administration to the retail situation. Topics to be covered include site selection for single and multi-unit retail outlets,

organizing and staffing the retail operation, the wholesaler-retailer relationship, consumer behaviour in the retail situation. The impact of such new developments as consumer cooperatives, franchising, discounting and computer technology on the future of retailing will also be considered. (3 credits). *NOTE A/See § 200.2.*

MARKETING 464
Consumerism

Prerequisite: Marketing 213. The current evolution of marketing and consumerism is subjected to critical evaluation and analytical review. Problem areas which may be examined include marketing costs and efficiency, the social objectives of and objections to marketing, the impact of marketing on the environment, the "pollution of advertising", ethics of marketers, and the role of government in the market place. (3 credits). *NOTE A/See § 200.2.*

MARKETING 485
Industrial Marketing

Prerequisites: Marketing 350 and 352. Products and services to other industrial customers are studied, first at the technical representative and selling level, then at the product manager and new products development level, and finally at the level of industrial marketing management. (3 credits). *NOTE A/See § 200.2.*

MARKETING 490
Marketing Policy

Prerequisites: Marketing 350 and 9 additional credits in marketing courses. A capstone course in Marketing, utilizing readings, projects and selected case studies requiring the student to incorporate concepts and techniques of previous marketing courses in determining marketing policy. (3 credits). *NOTE A/See § 200.2.*

MARKETING 491
Special Projects Seminar

Prerequisite: Permission of the Department. Individual study or special project in marketing field. (3 credits). *NOTE A/See § 200.2.*

61.12 Quantitative Methods

Professor and Acting Chairman of the Department
G. PEDERZOLI

Associate Professors
C. BAYNE
D. DOREEN
Z. G. POPP
R. O. WILLS
E. N. WEST

Assistant Professors
C. RITZ
L. SMITH
R. S. SRINIVASAN

Lecturers
A. RIDING
H. GÉRAR
A. DAVIS

Sessional Lecturer
L. VERCHERE

61.12.1 COURSE DESCRIPTIONS

QUANTITATIVE METHODS 208 (108)
Mathematical Analysis for Management I

Prerequisite: Mathematics 101. This course is an introduction to the mathematics useful in solving problems. Applications will be stressed. Although not designed for future mathematicians, students who intend to go on to graduate school will find that this course gives them the required mathematical background. Mathematical models; numbers and numerals; functions; linear and quadratic functions; experimental and logarithmic functions; periodic functions; sequences and limits; differential calculus; integral calculus. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 209 (109)
Mathematical Analysis for Management II

Prerequisite: Mathematics 101. This course is an introduction to the mathematics useful in solving problems. Applications will be stressed. Although not designed for future mathematicians, students who intend to go on to graduate school will find that this course gives them the required mathematical background. Systems of linear equations and inequalities; matrix algebra; elementary optimization problems; linear programming; possibilities and probabilities; expectations; decisions; games; simulations. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 243
Introductory Business Statistics I

Prerequisites: One CEGEP course in each of Intermediate Algebra and Calculus, or equivalent. An introductory course in business statistics which includes: descriptive measures; index numbers; frequency distribution analysis; probability theory; theoretical discrete and continuous distributions; point and confidence interval estimation; elementary hypothesis testing. Applications in administration and management will be emphasized (finance, marketing, etc.). Lectures and lab. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 244
Introductory Business Statistics II

Prerequisite: Quantitative Methods 243 or equivalent. This course is an extension of Quantitative Methods 243 which includes simple linear regression and correlation analysis, elementary forecasting and smoothing techniques, time series analysis, elementary sampling theory, acceptance sampling, quality control, and introduction to variance analysis. Applications in administration and management will be emphasized (finance, marketing, etc.). Lectures and lab. (3 credits). *NOTE A/See § 200.2*

QUANTITATIVE METHODS 313
Managerial Operations Research I

Prerequisites: Quantitative Methods 243 and 244, or equivalent. This course is an introduction to managerial operations research and its role and function in executive decision. The basic areas covered include: optimization concepts and model building; decision theory (matrix and decision tree approach); game theory; utility theory; allocation theory (assignment and transportation problems); linear programming and applications. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 314
Managerial Operations Research II

Prerequisite: Quantitative Methods 313 or equivalent. This course is an extension of Quantitative Methods 313. The basic areas covered include: inventory theory and control; simulation (deterministic and stochastic); sequencing and scheduling models; network theory (CPM and PERT); and applications of Markov Chains. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 353
Mathematical Analysis for Business — Calculus

Prerequisites: One CEGEP course in each of Intermediate Algebra and Calculus or equivalent. The various applications of differential and integral calculus and the use of difference and differential equations in the functional areas of management, e.g. production, marketing, accounting, and finance, personnel administration, and purchasing will be studied. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 354
Mathematical Analysis for Business — Matrix Algebra

Prerequisites: One CEGEP course in each of Intermediate Algebra and Calculus or equivalent. Properties and applications of matrix algebra in the functional areas of management, e.g. production, marketing, accounting and finance, personnel administration and purchasing, will be studied. Special applications (e.g. Input-Output Analysis) will be explored. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 415
Managerial Operations Research — Advanced

Prerequisites: Quantitative Methods 313 and 314, or equivalent. In this course more advanced operations research techniques are presented with special reference to their applicability to managerial decision-making. The topics include: mathematical programming (linear, non-linear, integer and dynamic); queuing theory (analytical and stimulated solutions); maintenance and replacement problems. The course will make generous use of relevant cases and will require computer applications using the real time computer terminal facilities of the university. The emphasis is on the development of the quantitative problem solving ability of the student with special regard to practical applications in production, marketing, accounting and finance, personnel, administration, purchasing, etc. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 423
Computers and Data Processing

Prerequisite: Computer Science N-211 or equivalent. This course provides an introduction to business data processing. It introduces the Common Business Oriented Language (COBOL) and concentrates on mass storage characteristics and techniques with special reference to file organization and design. Basic business applications (e.g. accounts receivable, inventory, payroll, forecasting) will be studied. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 424
Data Processing Systems and Applications

Prerequisite: Computer Science N-211 or equivalent. This course will survey and study the various currently available data processing systems and their applications (e.g. time sharing, real time, multi-programming and multi-processing, data communications, computer utilities). The selection and evaluation of both hardware and software will be discussed. This is an appreciation course oriented towards the potential user. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 425
Business Systems Analysis and Design

Prerequisite: Computer Science 211 or equivalent. This is an introductory course in business systems theory. It will study the various characteristics and nature of business systems. System components and input-processing-output relationships will be examined and the methodology and techniques of systems design and analysis will be explored. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 426
Business Systems Simulation and Control

Prerequisite: Computer Science N-211, Quantitative Methods 244, and 314; or equivalent. Digital simulation of stochastic and deterministic business sub-systems will be studied and executed in FORTRAN; various other simulation languages and models will be reviewed and evaluated; large scale simulation models (total system approach) and computer oriented management planning and control models will be examined. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 433
Topics in Quantitative Methods

Prerequisite: Permission of the Department. This course is intended primarily for honours or major students, and affords an opportunity for more intensive examination of one or more particular topics in quantitative methods. The specific subject will vary according to the special interest of the professor offering the course in any given year. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 445
Advanced Business Statistics — Statistical Estimation

Prerequisites: Quantitative Methods 243 and 244, or equivalent. This course deals with multivariate analysis and sampling theory as applied to business and economic problems. It is expected that the students acquire a good working knowledge of these techniques through extensive use of the Quantitative Methods laboratory facilities. The course content includes: linear and non-linear multiple regression and correlation analysis; exponential smoothing, and advanced forecasting techniques; advanced sampling theory. Applications will deal with problems in the functional areas of management, e.g., production, marketing, accouunting, finance, personnel administration, and purchasing.. (3 credits). *NOTE A/See § 200.2.*

QUANTITATIVE METHODS 446
Advanced Business Statistics — Statistical Analysis

Prerequisites: Quantitative Methods 243 and 244, or equivalent. This course is complementary to Quantitative Methods 445. It will deal with various topics in statistical analysis applied to business and economic problems. The areas of application are essentially production, marketing, accounting, and finance, personnel administration, and purchasing. It includes: analysis of variance; design of experiments; non-parametric statistics and introduction to factor analysis. (3 credits). *NOTE A/See § 200.2.*

61.13 Additional Courses for Commerce Students

61.13.1 COMPUTER SCIENCE

Courses in Computer Science are available as electives to Commerce students. Refer to § 51.8.3 and § 71.9.2 of this calendar for a complete listing.

61.13.2 FINE ARTS

The following course in Fine Arts is available to Commerce students.

THEATRE ARTS N-340 (440)
Theatre Administration

A course in theatre administration covering office and plant management, production, touring, and prepackaged plant costing; contracts, insurances, budgeting and seasonal planning. Lectures with actual case studies in depth. (6 credits)

61.14 Continuing Education Courses — Non credit

The following courses, administered by the Continuing Education office on behalf of the Faculty of Commerce and Administration, are offered to meet the needs of various business organizations. They do not carry credits towards the Bachelor of Commerce degree. Students must consult the time-table to determine which of the following courses are offered in the current academic year.

BUSINESS N-221 (221) (NON-CREDIT)
Office Management

A course in the principles of office management, including such topics as the function of the office in business; organization and principles of control; office systems and routines; office equipment and labour saving devices; office planning and layouts; selection and training of office personnel; office communications.

NOTE: This course was previously designated as Administration 221. Students who have taken Administration 221 should not take this course.

BUSINESS N-222 (222) (NON-CREDIT)
Procurement Principles

This course is designed to cover the funda-

mentals of purchasing policies and procedures and the organization and functions of the purchasing department in business and industry. Topics covered will include pricing, negotiation, quality and quantity determination, budgetary institutions etc., as well as the relationship between purchasing and other management functions. Class discussion and case studies are the basic method of study employed.

NOTE: This course was previously designated as Administration 442 and 443. Students who have taken Administration 442 and/or 443 should not take this course.

BUSINESS N-223 (223) (NON-CREDIT)
Business Systems

This couse is designed primarily for students with practical business experience, managers, and potential system men. It provides a panoramic view of the systems tools, techniques and equipment and relates them to practical situations arising in an enterprise in this age of change. Topics covered include: translation of management objectives into business system procedures and methods; organization planning; fact finding and related tools such as flow charting, work measurement, information requirement studies; selling implementation and management of system and organization changes including planning, presentation and documentation tools such as a critical path scheduling, decision table construction, procedure writing, project control techniques; information gathering, processing, distribution and retention equipment from simple office machines to computers.

NOTE: This course was previously designated as Executive Training 441 and 442. Students who have taken Executive Training 441 and/or 442 should not take this course.

BUSINESS N-241 (241) (NON-CREDIT)
International Trade

The fundamental and practical aspects of importing and exporting, covering such subjects as trade terms and definitions, import and export regulations; export credits insurance; customs regulations; handling of export traffic; trading documents; air cargo and air express; marine insurance; financing.

NOTE: This course was previously designated as Marketing 241. Students who have taken Marketing 241 should not take this course.

BUSINESS N-251 (251) (NON-CREDIT)
Transportation and Traffic (Introductory)

This course in freight traffic management is primarily for students who wish to specialize in this line of endeavour. It covers the practical aspects of transportation in Canada including such matters as bills of lading and shipping procedures; special services of railways; express; claims and claims preventions; freight contracts; marine insurance; customs; interpretation of the railway act and railway law.

NOTE: This course was previously designated as Marketing 251. Students who have taken Marketing 251 should not take this course.

BUSINESS N-252 (252) (NON-CREDIT)
Transportation and Traffic (Advanced)

Prerequisite: Business 251. This course in freight traffic management is primarily for students who wish to specialize in this line of endeavour. It covers the practical aspects of transportation in Canada including such matters as tariff construction and freight rate structures; condition of carriage; ocean freight contracts; marine insurance; customs; interpretation of the railway act and railway law.

NOTE: This course was previously designated as Marketing 252. Students who have taken Marketing 252 should not take this course.

BUSINESS N-260 (NON-CREDIT)
Basic Mathematics for Business

Review of elementary algebraic operations; fractions, ratios, proportions, percentages, simple equations, arithmetic and geometric progressions, logarithms; graphical algebra; simple and compound interest; annuities, amortization and sinking funds, depreciation and bond values; simple business statistics including: the collection of statistical data, various methods of presentation including tables and graphs, the frequency distribution and its mathematical analysis including averages, measures of dispersion, measures of skewnesses, normal curve, and correlation.

61.15 The Order of Chartered Accountants

A graduate of Concordia University holding the Bachelor of Commerce degree (major or honours in Accountancy) may register as an apprentice with the Order of Chartered Accountants of Quebec and may apply for exemptions based on academic achievement.

Students requiring further information should contact the Accountancy Chairman on their respective campuses.

61.16 Special Certificate Programmes

There are many organizations within the business community designed to serve the needs of people working in specialized areas of business. These organizations recognize that the educational qualifications of those seeking membership must be continually upgraded. Therefore, they sponsor an Academic Certificate which may be obtained through correspondence courses or through a lecture programme.

The Faculty of Commerce and Administration cooperates with these business organizations by permitting personnel to register as independent (partial) students, and to take courses leading to a certificate to be awarded by the organization concerned.

Students must comply with the university regulations regarding dates of application and independent (partial) student entrance requirements as outlined in the Academic Calendar §11. In addition to this, they must meet the requirements of the specific organization.

The credit course taken may be applied towards the Bachelor of Commerce degree provided the student meets the admission requirements and wishes to transfer from independent (partial) status to undergraduate status after completing a certificate programme. Students are advised that they must meet the Bachelor of Commerce curriculum requirements in force at the date of transfer.

Each certificate programme has one or more special courses required to complete the programme. These courses do not carry credit toward a Bachelor's degree and are designated as non-credit courses.

Students interested in the following certificate programmes will obtain details of required courses from the organization concerned:

The Administrative Management Society (Montreal Chapter) Inc.

The American Marketing Association (Montreal Chapter)

The Canadian Association of Purchasing Agents (Montreal Division)

Data Processing Management Association (Montreal Chapter)

Institute of Canadian Bankers

The Montreal Personnel Association

The Systems and Procedures Association of America (Montreal Chapter)

The following organizations suggest that students take certain courses at this university as preparation for their uniform final examinations.

The Professional Corporation of Industrial Accountants of Quebec

Association of Certified General Accountants (Quebec Division)

Association of Chartered Institute of Secretaries (Quebec Division)

61.17 Commerce & Administration Consultative Committee

The purpose of this committee is the maintenance of a continuing and constructive relationship and dialogue between the Faculty of Commerce and Administration and a broadly representative group of senior business executives. In this way the relevance of the work of the Faculty to the needs of the business community is kept under review, while the objectives, roles and accomplishments of the Faculty and the qualifications of its graduates are made better known in business circles.

The personnel of the Committee comprises senior members of the business community, senior faculty representatives and also representatives of student organizations.

Chairman

WILLIAM T. G. HACKETT, Special Lecturer, Department of Finance

Vice-Chairman (Business)

DAVID E. SLOAN
Canadian Pacific Limited

Vice-Chairman (Academic)

BRUCE MALLEN, Chairman, Graduate Studies (Faculty of Commerce and Administration)

Business

PHILLIP P. ASPINALL, Partner, Coopers & Lybrand

DONALD S. BARTLETT, President, Bar-Well Foods Ltd.

MARGARET E. CAMERON, Vice-President and Secretary-Treasurer, McLean Budden Limited

RUPERT B. CARLETON, Vice-President and General Counsel, Cemp Investments Limited

JACQUES CARTIER, Senior Vice-President, Petrofina Canada Limited

F. E. CASE, Chairman of the Board, Montreal Trust Company

G. G. DUNNIGAN, Group Vice-President, Steetley Industries Ltd.

A. FISHER, President, FBI Foods Limited

MARTHE HATCH, Director, Marketing Research, La Brasserie Molson du Québec Ltée.

J. PETER KOHL, General Manager, The Montreal Gazette Limited

WALTER J. McCARTHY, Senior Vice-President, Finance, Sun Life Assurance Company of Canada

H. S. McEVOY, Vice-President, Extruded and Building Products

FRED H. McNEIL, President, Bank of Montreal

RONALD H. PEROWNE, President, Dominion Textile Limited

RONALD K. HOLLIDAY, President, Johnson & Johnson Limited

THE HON. MAURICE SAUVÉ, P.C., Vice-President, Administration Consolidated-Bathurst Limited

H. ARNOLD STEINBERG, Executive Vice-President, Administration and Finance, Steinberg's Limited

NICHOLAS TAKACSY, Vice-President and Director, Greenshields Incorporated

ORLAND TROPEA, Vice-President, Regulatory Matters, Bell Canada

Faculty

ANDREW BERCZI, Dean of the Faculty of Commerce and Administration

LAWRENCE J. BOYLE, Associate Professor, Department of Finance

GUNTHER BRINK, Chairman, Undergraduate Curriculum Committee

G. ROBERT CURNEW, Acting Chairman, Department of Marketing

JAMES G. FINNIE, Chairman, Department of Accountancy

MICHAEL KAWAJA, Associate Professor, Department of Finance

GIORGIO PEDERZOLI, Acting Chairman, Department of Quantitative Methods

CALVIN C. POTTER, Chairman, Department of Finance

STEPHEN P. ROBBINS, Chairman, Department of Management

ROLAND O. WILLS, Associate Professor, Department of Quantitative Methods

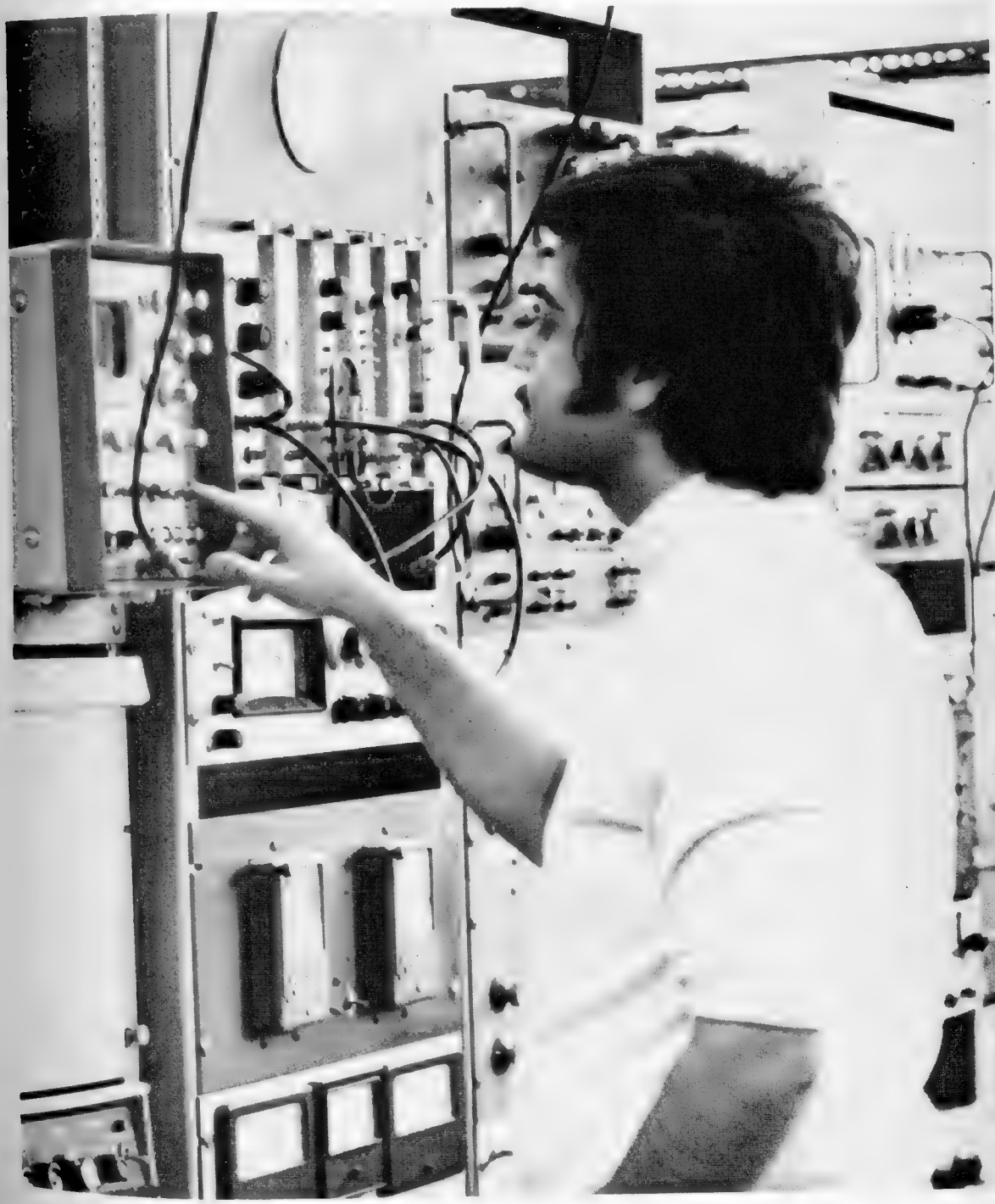
Students

HOWARD BERISH, President, Commerce Students Association

DESMOND McLAUGHLIN, President, M.B.A. Students Association

Commerce Representative, Evening Students Association: T.B.A.

71 Faculty of Engineering



71.1 Faculty of Engineering

Dean
J. CLAIR CALLAGHAN
Vice-Rector, Academic, and Professor of Engineering
JACK BORDAN
Associate Dean (Loyola Campus)
GEORGE W. JOLY
Assistant Dean, Undergraduate Studies, Engineering and Computer Science
F. DOUGLAS HAMBLIN
Assistant Dean, Graduate Studies, Engineering and Computer Science
J. CHARLES GIGUERE
Chairman, Department of Civil Engineering
PAUL P. FAZIO
Chairman, Department of Electrical Engineering
M. N. S. SWAMY
Chairman, Department of Mechanical Engineering
M. P. du PLESSIS
Chairman, Department of Computer Science
H. STANLEY HEAPS
Director, Personnel and Resources (Loyola Campus)
STANLEY J. KUBINA

Note:
The following programmes are offered in the Faculty of Engineering:
(1) Bachelor of Engineering degrees in Civil, Electrical and Mechanical Engineering;
(2) Bachelor of Computer Science degree;
(3) Bachelor of Science degree;
(4) Certificate in Quality Control.

The requirements for the four programmes are different, and the appropriate section in the following pages must be consulted for each.

71.2 Bachelor of Engineering Programme

The programme leading to the Bachelor of Engineering degree is offered at the Sir George Williams campus. The First Year of the programme is also offered in the Day Division at the Loyola campus in 1975/76.

71.2.1 ADMISSION REQUIREMENTS

Applications for admission to the BEng programme are submitted to the Admissions Office at the preferred campus.

Students are normally admitted in September for programmes in the Day Division, Evening Division or Industrial Parallel Studies. Applicants are also accepted to the First Year, Day Division, in January, and courses are scheduled to make it possible for them to enter Second Year in September of the same calendar year.

General Admission requirements are listed § 13.

Specific requirements are those contained in the CEGEP pre-Engineering profile or their equivalent, that is:

	CEGEP
Biology	301
Chemistry	101
	201
Mathematics	101
	103
	105
	203
Physics	101 or 102
	201 or 202
	301 or 302

Applications from graduates of CEGEP technology programmes will also be considered. Such applicants admitted to the undergraduate programme may be required to take certain special courses in the Evening Division.

71.2.2 CURRICULUM FOR THE DEGREE OF BACHELOR OF ENGINEERING

The university offers a programme leading to the degree of Bachelor of Engineering in the fields of Civil, Electrical and Mechanical Engineering. To be recommended for the degree of Bachelor of Engineering, students must satisfactorily complete all the General Requirements and all the requirements of the department in which they are registered. The General Requirements are given below and comprise the Graduation Regulations, the French Language Requirement and a uniform group of courses, as well as the Academic Regulations, all are common to the three departments. The individual Departmental Requirements are given in subsequent sections. They comprise a group of required courses with a group of elective courses which allow students to select part of their programme to provide some depth in an area of specialization according to their particular interests or breadth in the general field of their chosen department.

In their final undergraduate year, students with high standing may be granted permission by their department and the Engineering Graduate Studies Committee to register for a limited number of graduate courses offered by the Faculty in lieu of some courses in the undergraduate programme.

A special feature of the programme is the early introduction of a "physical systems approach" as a unifying theme, concurrent with a related sequence of laboratory work designed to emphasize a concern for the problems of measurement and associated instrumentation. Undergraduates may elect to follow programmes designed to provide modern education in the traditional engineering disciplines, or they may elect to concentrate on systems engineering in considerable depth.

71.2.3 MEMBERSHIP IN THE ORDER OF ENGINEERS OF QUEBEC

The Order of Engineers of Quebec (OEQ) has fully accredited the Bachelor of Engineering curricula in Civil, Electrical, and Mechanical Engineering. OEQ will admit graduates of these three programmes as members according to the Engineers Act and the OEQ By-Laws.

71.2.4 ACCREDITATION BY THE CANADIAN COUNCIL OF PROFESSIONAL ENGINEERS

The Accreditation Board of the Canadian Council of Professional Engineers (CCPE) has accredited the Bachelor of Engineering curricula in the Departments of Civil, Electrical, and Mechanical Engineering. The Board has recommended to the Constituent Associations of CCPE that graduation from the above curricula be considered as sufficient academic qualification for purposes of registration in all Provinces and Territories in Canada.

71.2.5 PROGRAMMES OF STUDY

Successful completion of the BEng degree programme requires hard work and considerable dedication on the part of each student. Courses are presented with the expectation of an average of about two hours of "outside" work for each lecture hour and about one-half hour of "outside" work for each hour spent in the laboratory for all programmes of study.

Programmes of study are available in both the Day and Evening Divisions as described below. Students are subject to the same regulations regardless of their programme of study.

(1) Day Division

The BEng programme is offered in the Day Division at the Sir George Williams campus. In 1975/76, the First Year of the programme is also offered at the Loyola campus.

Normal arrangements in the Day Division allow students' programmes to vary such that they can expect to graduate at the end of six to eight terms of successful study after entry with the minimum admission qualifications. In view of the expected average "outside" work load stated above, students must plan their individual programmes on the basis of their academic ability and in consultation with the chairman of their department.

(2) Evening Division

The programme of study in the Evening Division at the Sir George Williams campus offers an opportunity for part-time study of engineering fundamentals. A limited number of courses is offered annually from those marked † in the lists § 71.3 to § 71.6. Any special courses offered for graduates of CEGEP technology programmes admitted to Engineering undergraduate studies will also be offered in the Evening Division. Students will normally register for three courses per term, but they should consider their employment commitments as well as their academic ability in planning their programmes.

Evening Division students registered in the BEng programme must subsequently transfer to the Day Division to complete the requirements of that degree. Applications for transfer to the Day Division will be considered when the applicant has completed the minimum first year programme of the department in which he intends to continue his studies; those approved will become effective at the start of the next Fall term.

(3) Industrial Parallel Studies

Industrial Parallel Studies (IPS) are available in the Day Division at the Sir George Williams campus. They are offered for students who have successfully completed the First Year of the programme, or its equivalent, and whose employers are prepared to certify that they will be employed for a maximum of 20 hours per week during Winter Sessions. The Faculty timetable is arranged to allow students undertaking IPS to attend the university for either five half days or two and one-half days per week.

Priority for IPS is given to students who have completed the First Year of the programme in the Evening Division. All students undertaking such studies must have been granted permission by the office of the Assistant Dean, Undergraduate Studies, Engineering and Computer Science, from whom the pamphlet *Industrial Parallel Studies*, giving more detailed information, can be obtained upon request.

71.3 General Requirements

71.3.1 ACADEMIC REGULATIONS

Students should refer to the section presenting the Academic Regulations of the university, § 16

71.3.2 GRADUATION REGULATIONS

Upon the completion of all the requirements for the BEng degree, candidates will be recommended for its award provided they have a cumulative grade point average (cgpa) of at least 1.80. This average will be calculated as the ratio of the sum of the grade points obtained in the complete programme followed by the candidate to the total number of courses taken in that programme, with the following points being awarded for each grade.

Grade	A	B	C	D	Failing grades (F, Abs, Inc, R)
Points	4	3	2	1	0

A failing grade in a required course must

have been cleared by a passing grade in that course; that is, either an S grade, or a passing grade when repeating the course. A failing grade in an elective course should have been similarly cleared, but a passing grade in a different elective may be used to clear such a failure provided registration in it was approved by the chairman of the department in which the candidate is registered.

In calculating the cgpa, the S grade removes the zero for the failing grade and counts as one point for the course. However, a failing grade not cleared by the S grade is included in the calculation as well as the grade subsequently obtained when repeating the course or taking a substitute elective. Both a repeated course and a substitute elective are counted as additional courses in assessing the total number of courses taken. Failures in supplemental examinations have no effect on the cgpa.

71.3.3 FRENCH LANGUAGE REQUIREMENT

All undergraduates registered for the BEng degree are required to pass, or be exempt from, a French language examination at some time prior to graduation. Students whose previous education was conducted in the French language are exempt from this requirement upon application to the Assistant Dean, Undergraduate Studies, Engineering and Computer Science. Foreign students attending the university on a student visa at the start of the calendar year in which they expect to graduate are also exempt upon similar application.

Examinations will be held in the Fall and Spring terms of each year. It is recommended that students who do not have sufficient background in the French language take French N-211 during their first year of residence.

71.3.4 COURSE REQUIREMENTS

To be recommended for the degree of Bachelor of Engineering, students must satisfactorily complete the following courses as well as those specified by their department, as shown in subsequent sections.

E Math N-312† Calculus & Differential Equations
E Math N-332† Matrices & Advanced Calculus
E Math N-352† Complex Variables
E Math N-371† Applied Probability & Statistics
Engin N-211† Engineering Graphics
Engin N-221† Materials Science
Engin N-241† Applied Mechanics
Engin N-341† Mechanics of Materials 1
Engin N-351† Thermodynamics 1
Engin N-371† Physical Systems & Measurements I
Engin N-372† Physical Systems & Measurements II
Engin N-501 Engineering Economy & Practice
Engin N-510 Technical Report (1)
Two courses in Social Aspects of Engineering

†Offered in both Day and Evening Divisions
(1) To be submitted at the beginning of the academic year in which the student expects to graduate.

71.3.5 FIRST YEAR PROGRAMMES

All undergraduates in the BEng programme must satisfactorily complete the courses listed as General Requirements above. Undergraduates are admitted to one of the Departments of Civil, Electrical or Mechanical Engineering and the first year programmes for each are given in the appropriate departmental section below for students undertaking studies with the expectation of graduating in either six or eight terms after entry with the minimum admission qualifications. The remaining courses included in the General Requirements are taken in subsequent years.

Students admitted to the programme without previous credit for the equivalent of Computer Science N-211 (Data Processing 901) must complete that course or its equivalent before entering their second year of study in the BEng programme.

71.4 Department of Civil Engineering

Professor of Engineering and Chairman of the Department
PAUL P. FAZIO

Professors of Engineering
GEORGE W. JOLY
CEDRIC MARSH
M. S. TROITSKY
Z. A. ZIELINSKI

Associate Professors of Engineering
MATTHEW McC. DOUGLASS
CARL GOLDMAN
JULIUS KRANTZBERG
A. S. RAMAMURTHY

Assistant Professors of Engineering
H. K. HA
M. S. NASSER
OSCAR A. PEKAU
ALAN D. RUSSELL

Visiting Assistant Professor
MARK A. LANG

Research Assistant Professor
M. S. CHEUNG

Adjunct Professor
W. DAWSON

Adjunct Assistant Professor
A. KHALIL

Research Associate
JEAN-PIERRE KOUTCHOUK

Post-Doctoral Fellow
H. RADHAKRISHNAN

71.4.1 DEPARTMENT OF CIVIL ENGINEERING

Civil Engineering is primarily concerned with the creation of the complex systems of constructed facilities for sound economic growth of the community. In a broad sense, the civil engineer learns to control and modify the environment effectively so as to satisfy the needs and desires of society. His responsibility for design ranges from foundations and superstructures of our common structures such as buildings, bridges, dams, tunnels, wharves, etc., to many unusual structures such as rocket installations, containment vessels for nuclear reactors, supports for radio telescopes, frameworks for aircraft. In addition the civil engineer must concern himself with the engineering aspects of water resources, rivers, harbours, irrigation and drainage; with the disposal of wastes and the control of the quality of air and water; with highways, railroads, airports and other transportation facilities; with measuring, mapping and interpreting the physical conditions of the surface of the earth; and with planning metropolitan areas and constructing and managing their public facilities.

Technical electives in the Department of Civil Engineering are offered in three broad interrelated areas. Suiting their particular professional objectives and aptitudes, students can choose electives to provide some specialization in the following areas:

1. Structural Engineering
2. Water Resources Engineering
3. Transportation Engineering

In each case, a coherent programme of scientific, technical and management subjects must be chosen.

The University has approved a programme in Building Engineering; it will be implemented if funds are made available.

The requirements for the award of the BEng degree in the Department of Civil Engineering are shown below. Students should also refer to the sections entitled General Requirements: § 71.3

Departmental Requirements:

E Math N-411 Transform Calculus & Partial Differential Equations
Engin N-212 Introduction to Engineering Design
Engin N-361† Fluid Mechanics I
Engin N-441 Mechanics of Materials II
Engin N-461 Fluid Mechanics II
Civ. Eng. N-421 Engineering Materials
Civ. Eng. N-431 Geology
Civ. Eng. N-451 Structural Engineering I
Civ. Eng. N-452 Structural Engineering II
Civ. Eng. N-461 Hydrology
Civ. Eng. N-471 Surveying (1)
Civ. Eng. N-472 Transportation Engineering
Civ. Eng. N-531 Soil Mechanics I
Civ. Eng. N-532 Foundations
Civ. Eng. N-551 Structural Engineering III
Civ. Eng. N-561 Hydraulic Structures
Civ. Eng. N-581 Water Supply Systems
Civ. Eng. N-582 Urban Sanitation

(1) Summer school to be taken before entering second year of study in the Faculty of Engineering.
† Offered in both Day and Evening Divisions.

Technical electives

Technical electives will be chosen from the following courses or other undergraduate courses approved by the Chairman of the Department or his representative. Six units must be obtained in either Option S, T or W with at least six from the other Options.

	Elective Units	Option
Engin N-512 Operations Research	3	X
Engin N-541 Experimental Stress Analysis	3	X
Civ. Eng. N-511 Building Enclosure Design	3	X
Civ. Eng. N-533 Soil Mechanics II	3	X
Civ. Eng. N-552 Matrix Analysis of Structures	3	X
Civ. Eng. N-553 Advanced Reinforced Concrete Design	3	S
Civ. Eng. N-554 Advanced Steel Structures	3	S
Civ. Eng. N-562 Water Resources Engineering I	3	W
Civ. Eng. N-563 Water Resources Engineering II	3	W
Civ. Eng. N-571 Highway Design	3	T
Civ. Eng. N-572 Traffic Engineering	3	T
Civ. Eng. N-573 Urban Planning	3	X
Civ. Eng. N-591 Construction Engineering	3	X

First Year Programmes

Six-term sequence	**Eight-term sequence**
E Math N-312	E Math N-312
E Math N-332	E Math N-332
E Math N-352	Engin N-211
E Math N-371	Engin N-221
Engin N-211	Engin N-241
Engin N-221	Engin N-341
Engin N-241	Engin N-351
Engin N-341	Engin N-371
Engin N-351	Engin N-372
Engin N-371	
Engin N-372	

71.5 Department of Electrical Engineering

Professor of Engineering and Chairman of the Department
M. N. S. SWAMY

Professors of Engineering
ANDREAS ANTONIOU
B. B. BHATTACHARYYA
J. CLAIR CALLAGHAN
STANLEY J. KUBINA
BELA A. LOMBOS
V. RAMACHANDRAN

Associate Professors of Engineering
J. CHARLES GIGUERE
SERGE A. GRACOVETSKY
JAMES F. LINDSAY
VACLAV PANUSKA
M. VIDYASAGAR

Associate Professor of Engineering and Computer Science
WOJCIECH M. JAWORSKI

Assistant Professors of Engineering
EDWARD CERNY
K. FEHER
OTTO SCHWELB
VICTOR STEFANOVIC

Lecturer
CHRISTOPHER TRUEMAN

Visiting Research Associate Professor
K. THULASIRAMAN

Adjunct Assistant Professors
I. KAUFMAN
W. B. MIKHAEL

Research Associates
S. CHAKRAVARTHY
K. S. RAO
C. H. REDDY

71.5.1 DEPARTMENT OF ELECTRICAL ENGINEERING

Electrical Engineering is concerned primarily with energy and information: their conversion, transformation and transmission in the most efficient, convenient and reliable manner.

Electric motors and illumination are two aspects of electrical engineering which are easily recognized. The electrical engineer is involved not only in their design, manufacture and application, but also in the original conversion from mechanical, thermal, solar, wind or nuclear energy to electrical form and its transmission to the place where it is required. Another important aspect of electrical engineering is in the field of information processing and transmission, for example telegraph, telephone, radio, television, radar and computers. The activities of electrical engineers therefore may range from the generation and distribution of massive amounts of power, through information systems, computer science to various interdisciplinary fields such as biomedical engineering. Electrical engineers through their various functions, therefore exert a profound influence on the cultural, social and economic life of a modern society.

The Electrical Engineering programme emphasizes the breadth of the field through a series of courses giving a unified treatment of several kinds of physical systems. Towards the end of the programme, a student may choose from a broad range of courses, groups which will allow him to obtain either a broad education in electrical engineering or to specialize to some extent in one or two specific areas.

The requirements for the award of the BEng degree in the Department of Electrical Engineering are shown below. Students should also refer to the section entitled General Requirements: § 71.3

Departmental Requirements:

E Math N-412 Transform Calculus & Advanced Differential Equations
Engin N-472 Fundamentals of Control Systems
Elec. Eng. N-351*† Fundamentals of Electrical Engineering
Elec. Eng. N-411 Electronics I
Elec. Eng. N-412 Electronics II
Elec. Eng. N-421 Electrical Properties of Solids
Elec. Eng. N-431 Electromechanics I
Elec. Eng. N-441 Linear Network Analysis
Elec. Eng. N-442 Distributed Parameter Systems
Elec. Eng. N-451 Electromagnetic Field Theory
Elec. Eng. N-501 Electrical Engineering Seminar
Elec. Eng. N-521 Semiconductor Physics
Elec. Eng. N-561 Communication Theory

†Offered in both Day and Evening Divisions
**For students admitted to the programme after January 1974.*

Technical Electives

Technical electives to a total of at least 27 elective units will be chosen from the following courses. All elective patterns must be

approved by the Chairman of the Department or his representative. (Students who entered Second Year before January 1975 are required to obtain 26.5 elective units, excluding those for Engineering N-471 which was a required course in their programme.)

	Elective Units
E. Math N-471 Introduction to Stochastic Processes	3
E. Math N-491 Numerical Methods in Engineering Systems	3
Engin N-361† Fluid Mechanics I	3
Engin N-471 Physical Systems & Measurements III	3.5
Engin N-511 Computer Organization & Software	4
Engin N-512 Operations Research	3
Engin N-571 Time Domain Analysis & Design	4
Engin N-572 Studies in System Optimization	4
Engin N-573 Control System Design	4
Engin N-574 Digital Computers in Systems	4
Elec. Eng. N-432 Electromechanics II	3.5
Elec. Eng. N-511 Pulse Circuits	4
Elec. Eng. N-513 Design of Logic & Switching Circuits I	3.5
Elec. Eng. N-514 Design of Logic & Switching Circuits II	3
Elec. Eng. N-522 Semiconductor Devices Design	3.5
Elec. Eng. N-531 Electrical Power System Engineering	3.5
Elec. Eng. N-533 Thyristor Power Applications	3.5
Elec. Eng. N-541 Modern Filter Design	3.5
Elec. Eng. N-542 Digital Filters	3
Elec. Eng. N-543 Topics in Network Theory	3
Elec. Eng. N-551 Lasers and Masers	3.5
Elec. Eng. N-552 Microwave Engineering	3.5
Elec. Eng. N-562 Statistical & Digital Communications	3.5
Elec. Eng. N-581 Electrical Engineering Project	3
Comp Sci N-421 Introduction to the Theory of Automata	3

† *Offered in both Day and Evening Divisions*

First Year Programmes

Six-term sequence	**Eight-term sequence**
E Math N-312	E Math N-312
E Math N-332	E Math N-332
E Math N-352	E Math N-352
E Math N-371	Engin N-211
Engin N-211	Engin N-221
Engin N-221	Engin N-241
Engin N-241	Engin N-371
Engin N-351	Engin N-372
Engin N-371	Elec. Eng. N-351
Engin N-372	
Elec. Eng. N-351	

71.6 Department of Mechanical Engineering

Professor of Engineering and Chairman of the Department
M. P. Du PLESSIS

Professors of Engineering
NORMAN F. JENNINGS
CLYDE C. K. KWOK
HUGH J. McQUEEN
M. O. M. OSMAN

Associate Professors of Engineering
RICHARD M. H. CHENG
F. DOUGLAS HAMBLIN
S. KATZ
KALMAN I. KRAKOW
THIAGAS S. SANKAR
GEORGE D. XISTRIS

Assistant Professors of Engineering
SUI LIN
G.M. McKINNON
RAFIK NEEMEH
H. WARDELL, S.J.

Visiting Research Professor
P. DRANSFIELD

Research Assistant Professor
Y. C. DESJARDINS

NRC Adjunct Professor
W. HAYES

Research Associates
A. FAHIM
J. HULET
P. M. LEE
N. SURESH
J. SVOBODA

71.6.1 DEPARTMENT OF MECHANICAL ENGINEERING

As in all branches of professional engineering, the mechanical engineer is concerned with the creation of devices, systems, structures and processes for human use. His task is to apply scientific, mathematical, economic and social knowledge to satisfy specific needs. The services required of mechanical engineers encompass a very wide range of professional activity, such as design, research, development and management carried out in environments of equally diverse nature, such as industry, medicine, private practice, university and government.

Representative fields of endeavour for mechanical engineers include all forms of power generating equipment (steam, internal combustion, nuclear, jet, rocket, fuel cells), the design of mechanisms and machines, controls and automation, vibration analysis, environmental control (heating, ventilation and refrigeration), materials handling and precision measurement.

Any of the specific fields may involve the design, construction and control of machines and equipment as well as the research and development of new processes, materials and techniques.

In view of the very wide range of activities in the field, the mechanical engineering curriculum consists of a combination of core courses with a series of technical electives. Strong emphasis is given to building on the principles presented in the basic engineering science and physical systems courses of the General Requirements. Further core courses are taken by all mechanical engineering undergraduates and deal with topics basic to the field, including control theory, thermodynamics, fluid mechanics, heat transfer, machine design and metallurgy. Technical electives allow students to obtain some specialization in a particular area of the field, depending on their interests and expected future professional activity. Three general areas of specialization are available, namely conventional mechanical engineering which emphasizes thermal fluid power, (Option A), design and production engineering, (Option B), and electro-mechanical systems, including control systems, (Option C).

The requirements for the award of the BEng degree in the Department of Mechanical Engineering are shown below. Students should also refer to the section entitled General Requirements § 71.3.

Departmental Requirements:

E Math N-411 Transform Calculus & Partial Differential Equations
Engin N-212 Introduction to Engineering Design
Engin N-361† Fluid Mechanics I
Engin N-441 Mechanics of Materials II
Engin N-461 Fluid Mechanics II
Engin N-471 (1) Physical Systems & Measurements III
Engin N-472 Fundamentals of Control Systems
Engin N-473 (2) Measurement Systems
Elec Eng N-431 Electromechanics I
Mech Eng N-321 Strength & Failure in Metals
Mech Eng N-411 (2) Mechanical Engineering Laboratory I
Mech Eng N-423 (1) Thermal Treatment and Processing of Metals

Mech Eng N-441 Kinematics of Mechanisms
Mech Eng N-442 Dynamics of Machines
Mech Eng N-451 Thermodynamics II
Mech Eng N-452 Heat Transfer I
Mech Eng N-511 (2) Mechanical Engineering Laboratory II
Mech Eng N-541 Mechanical Engineering Design I
Mech Eng N-544 (2) Mechanical Engineering Design II

† *Offered in both Day and Evening Divisions.*
(1) For students who entered Second Year before January 1975
(2) For students entering Second Year after January 1975

Technical electives

Technical electives to a total of at least 17 elective units will be chosen from the following courses from within the same Option, A, B or C. All elective patterns must be approved by the Chairman of the Department or his representative.

	Elective Units	Options
Engin N-511 Computer Organization & Software	4	B,C
Engin N-512 Operations Research	3	B
Engin N-541 Experimental Stress Analysis	3	B
Engin N-571 Time Domain Analysis & Design	4	B,C
Engin N-572 Studies in System Optimization	4	C
Engin N-573 Control System Design	4	C
Engin N-574 Digital Computers in Systems	4	B,C
Elec Eng N-411 Electronics I	4	A,B,C
Elec Eng N-412 Electronics II	4	C
Elec Eng N-432 Electromechanics II	3.5	A,C
Mech Eng N-401 Seminar	1	A,B,C
Mech Eng N-423 (2) Thermal Treatment & Processing of Metals	4	A,B,C
Mech Eng N-501 Seminar	1	A,B,C
Mech Eng N-521 Deformation & Mechanical Shaping of Metals	3	A,B
Mech Eng N-543 Mechanical Vibrations	4	A,B,C
Mech Eng N-544 (1) Mechanical Engineering Design II	3.5	A,B,C
Mech Eng N-545 Machine Design	3	B
Mech Eng N-551 Thermodynamics III	4	A,C
Mech Eng N-552 Heat Transfer II	4	A,C
Mech Eng N-553 Environmental Control	3	A
Mech Eng N-555 Introduction to Nuclear Engineering	3	A,C
Mech Eng N-561 Gas Dynamics	4	A
Mech Eng N-562 Fluid Machinery	3	A
Mech Eng N-581 Design or Experimental Project	3	A,C

(1) For students who entered Second Year before January 1975
(2) For students entering Second Year after January 1975.

First Year Programmes

Six-term Sequence	Eight-term Sequence
E Math N-312	E Math N-312
E Math N-332	E Math N-332
E Math N-352	E Math N-352
E Math N-371	Engin N-211
Engin N-211	Engin N-221
Engin N-221	Engin N-241
Engin N-241	Engin N-351
Engin N-341	Engin N-371
Engin N-351	Engin N-372
Engin N-371	
Engin N-372	

71.7 Course Descriptions

ENGINEERING MATHEMATICS

ENGINEERING MATHEMATICS N-312
Calculus and Differential Equations

Vector functions of one variable, with applications. Introduction to ordinary differential equations. Functions of several variables: differentiation and multiple integrals.
Lectures: 3 hours per week.
Tutorials: 2 hours per week.
Prerequisite: Mathematics 005 or equivalent.

ENGINEERING MATHEMATICS N-332
Matrices and Advanced Calculus

Matrix algebra, characteristic value problems, diagonalization of Hermitian matrices. Cayly-Hamilton theorem and applications, quadratic forms, vector calculus.
Lectures: 3 hours per week.
Tutorials: 2 hours per week.
Prerequisite: Engineering Mathematics N-312 previously or concurrently.

ENGINEERING MATHEMATICS N-352
Complex Variables

Algebra of complex numbers in Cartesian and polar forms; functions and inverse functions of complex variables. Derivatives and Cauchy-Riemann, analytic and harmonic functions. Exponential, trigonometric, hyperbolic and logarithmic functions. Complex line integrals, Cauchy-Goursat theorem, Cauchy integral formula. Taylor's and Laurent's series. Residue theorem and applications.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-312; Engineering Mathematics N-332 previously or concurrently.

ENGINEERING MATHEMATICS N-371
Applied Probability and Statistics

Elementary probability theory. Binomial, normal and Poisson distribution. Sampling and decision theory. Curve fitting. Correlation theory. Applications to the analysis of experimental results. Factorial plans.
Lectures: 3 hours per week.

ENGINEERING MATHEMATICS N-411
Transform Calculus and Partial Differential Equations

The Laplace transform: Laplace transforms and their properties, solution of linear differential equations with constant coefficients. Further theorems and their applications. The Fourier transform: orthogonal functions, expansion of a function in orthogonal functions, the Fourier series, the Fourier integral, the Fourier transform, the convolution theorem. Partial differential equations: physical foundations of partial differential equations, Introduction to boundary value problems.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-332 & N-352 or N-331 & N-351.

ENGINEERING MATHEMATICS N-412
Transform Calculus and Advanced Differential Equations

Singularity functions. The Laplace transform

and its inverse. Laplace transform of periodic functions. Fourier series; convergence of the series. The Fourier integral and the Fourier transform pair. Fourier transforms of functions which are not absolutely integrable. Discrete and continuous spectra. Representation of signals in time and frequency domains. Convolution in time and frequency domains. Ordinary differential equations with variable co-efficients. Power series solutions around ordinary and regular singular points. Introduction to Sturm Liouville problems. Special functions.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-332 & N-352 or N-331 & N-351.

ENGINEERING MATHEMATICS N-471
Introduction to Stochastic Processes

The concept of a random variable. Distribution and density functions. Functions of one random variable. Two random variables. Functions of two random variables. Properties of the multivariable normal distribution. General concepts of stochastic processes. Correlation and power spectrum of stationary processes.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-331 & N-371.

ENGINEERING MATHEMATICS N-491
Numerical Methods in Engineering Systems

Methods of numerical solution of mathematical models in engineering. Interpolation. Quadratures for numerical differentiation and integration of tabulated functions. Zeros of polynomials. Systems of linear and non-linear algebraic equations. Numerical solutions of ordinary differential equations using single and multi-step methods. Analysis of round-off and discretization errors. Numerical techniques for the inversion of matrices, and for determining eigenvalues and eigenvectors of matrices, state vectors, transfer vectors and matrices.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-311 & N-331.

ENGINEERING

ENGINEERING N-211
Engineering Graphics

Elements of orthogonal projection, principal and supplementary views, analysis of three-dimensional spatial relationships of points, lines, planes and solids. Introduction to sectioning conventions, drawing identification by reconstructing technical drawings in free-hand isometric views, and preparation of detail and assembly drawings.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.

ENGINEERING N-212
Introduction to Engineering Design

Introduction to engineering design procedures through the use of open-ended design projects. Lecture topics will include engineering design process, consideration of alternatives, specifications, pencil thinking, principle of design synthesis, dimensioning for manufacture and interchangeability, quality control, presentation of engineering data and calculations; application of computer graphics in design.
Lectures: 2 hours per week.
Laboratory: 2 hours per week.
Prerequisites: Engineering N-211; Computer Science N-211 or equivalent.

ENGINEERING N-221
Materials Science

A study of the relationships between properties and internal structure and of the mechanisms of structural change. Atomic bonding; molecular, crystalline and amorphous structures. Structural imperfections and atom movements. Microstructure, plastic deformation and mechanical properties of ceramics. Structure and mechanical properties of polymers.
Lectures: 3 hours per week.
Tutorial: 1 hour per week.

ENGINEERING N-241
Applied Mechanics

Resultants of force systems: equilibrium of particles and rigid bodies; distributed forces; statically determinate systems; friction; moments of inertia. Principles of particle kinematics and dynamics; rigid body motion; work and energy; impulse and momentum; dynamics of a system of particles and rigid bodies.
Lectures: 4 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Engineering Mathematics N-312 previously or concurrently.

ENGINEERING N-341 (343)
Mechanics of Materials I

Stress, strain and elasticity; analysis and design of structural and machine elements subjected to axial, torsional, and bending loads; shear and bending moment diagrams; deflections; analysis of statically indeterminate systems; combined stresses; composite beams.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Tutorial: 1 hour per week.
Prerequisites: Engineering N-241, Engineering Mathematics N-312, Engineering Mathematics N-332 previously or concurrently.

ENGINEERING N-351 (350)
Thermodynamics I

Basic principles of thermodynamics and their application to various systems composed of pure substances and their homogeneous nonreactive mixtures. Simple power production and utilization cycles.
Lectures: 3 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Mathematics 003, or equivalent.

ENGINEERING N-361 (351)
Fluid Mechanics I

Fluid properties and flow characteristics; fluid statics, basic laws for systems and control volumes, conservation of mass, linear-momentum equations, moment-of-momentum equations, first law of thermodynamics, Bernouli equation, kinematics of flow, dynamics of flow, dimensional analysis and similitude, characteristics of real fluid flow, flow measurement.
Lectures: 3 hours per week.
Tutorial: 1 hour per week.
Prerequisites: Engineering Mathematics N-312 & N-332, Engineering N-351.

ENGINEERING N-371
Physical Systems & Measurements I

Definition of dynamical system; lumped system elements, mechanical, electrical, fluid, and thermal; generalized lumped elements; modelling of simple systems; solutions of the equations for first and second order systems; analog computation in the study of system dynamics.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Tutorial: 1 hour per week.
Prerequisite: Engineering Mathematics N-312, previously or concurrently.

ENGINEERING N-372
Physical Systems & Measurements II

Network representation of systems; formulation of system equations; frequency response methods; generalized impedances; signal analysis, singularity functions, periodic functions.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Tutorial: 1 hour per week.
Prerequisites: Engineering Mathematics N-312, previously or concurrently; Engineering N-371.

ENGINEERING N-441 (441)
Mechanics of Materials II

Dynamic loading, repeated loads, stress concentrations and fatigue, introduction to inelastic action, energy methods, theories of failure, shear centre, unsymmetrical bending, bending of

curved bars, introduction to linearized mathematical theory of elasticity, introduction to elastic stability.
Lectures: 3 hours per week. Tutorial: 1 hour per week. Prerequisites: Engineering Mathematics N-332. Engineering N-341.

ENGINEERING N-461
Fluid Mechanics II

Incompressible viscous flow, steady closed conduit flow, fluid resistance and boundary layer effects, differential equations for open channel flow, specific energy, gravity waves, hydraulic jump. Fluid machinery. Selected experiments in incompressible flow and in open channel flow.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-361.

ENGINEERING N-471 (471)
Physical Systems & Measurements III

An extension of Physical Systems and Measurements I & II presenting a unified treatment of the measurement of physical quantities; the modelling of transducers; the multi-port nature of measuring systems; system behaviour; the validation of experimental data. Laboratory work includes experiments on transducer behaviour and system suitability.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-312 & N-332, Engineering N-372.

ENGINEERING N-472 (472)
Fundamentals of Control Systems

General feedback theory; time and frequency domain analysis of feedback control systems; stability criteria; root-locus methods; modelling of d.c. servo; design of simple feedback systems; introduction to state-space methods.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-411 or N-412; Engineering N-372.

ENGINEERING N-473
Measurement Systems

Unified treatment of measurement of physical quantities. Principle, characteristics, design and calibration of components and systems for measuring position, velocity, acceleration, force pressure, flowrate, temperature, proximity detection, etc. Background knowledge of electronics covering signal generation and processing. Concepts of accuracy and repeatability, linearity, response criteria, bandwidth, input and output impedance, matching of measuring systems, drift and bias.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-372.
NOTE: Students who have credit for Engineering N-471 may not take this course for credit.

ENGINEERING N-501
Engineering Economy & Practice

Different branches of law. Engineering registration. Negligence. Law vs. Ethics. Contracts. Labour organizations and legislation and Workmen's Compensation Act. Organization and financing of business enterprise. Functions of management. CPM and PERT. Economy studies for decision making. Annual cost method. Present worth method. Rate of return method. Multiple alternatives. Depreciation. Income tax.
Lectures: 3 hours per week.

ENGINEERING N-510 (510)
Technical Report

Each Engineering student must submit a technical report on entering his final year. This report should be from 2,000 to 5,000 words in length, on a topic drawn from the engineering experience of the student during his summer work. If a suitable topic based on personal experience is not available, the student may write on a topic connected with engineering, scientific or industrial work. Any student may consult the chairman of his department concerning the suitability of his proposed topic. If it is judged suitable, the letter of approval must accompany the report.

The report, including an abstract, must be suitably documented and illustrated, must be typewritten on one side only of 8½" x 11" white paper of good quality and must be suitably bound. Students are referred to Kate L. Turabian, *A Manual for Writers of Term Papers, Theses and Dissertations*, for matters of style and notation.

The report is to be submitted by the third Monday after Fall classes begin. With the exception of special circumstances approved by the Engineering Undergraduate Studies Committee in individual cases, any acceptable report submitted after this date will receive an S grade.

ENGINEERING N-511 (511)
Computer Organization & Software

Logical basis of computer structure; machine organization and functional units; machine programming including subroutines, linkages, macros and assembly systems; compilers and operating systems.
Lectures: 3 hours per week. Laboratory: 1½ hours per week.
Prerequisite: Computer Science N-211, or equivalent.

ENGINEERING N-512 (512)
Operations Research

An introduction to the application of mathematical models to various industrial problems; queuing theory, game theory, linear programming, inventory theory and Monte Carlo processes.
Lectures: 3 hours per week.
Prerequisite: Computer Science N-211, or equivalent.

ENGINEERING N-541 (CIVIL ENGINEERING 541)
Experimental Stress Analysis

A study of modern experimental methods of determining stresses and strains; mechanical, electrical and optical strain gauges; photoelasticity; brittle coatings; model analysis.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-441.

ENGINEERING N-571
Time Domain Analysis and Design

State space analysis and design of continuous and discrete systems. Controllability and observability, modal control, pole placement techniques, Luenberger observers, Liapunov stability.
Lectures: 4 hours per week.
Prerequisite: Engineering N-472.

ENGINEERING N-572
Studies in System Optimization

Various techniques of system optimization, such as calculus of variations, Pontryagin's maximum principle, as well as some numerical methods, are studied. These techniques are applied to real systems in fields such as engineering, management and economics.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-571.

ENGINEERING N-573
Control System Design

A course in industrial control design procedures by case study, including practical sensing, control, and actuating elements; optimization of system performance by choice of components and compensation; nonlinearities, introduction to multi-loop systems.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering N-471, previously or concurrently; Engineering N-472.

ENGINEERING N-574 (575)
Digital Computers in Systems

A study of the application of digital computers to control systems. Topics to be studied include

sampled data systems; coding and data transmission; interfaces and analog-digital conversion techniques; simulation of discrete systems.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering N-511 or Computer Science N-301; Engineering N-472.

SOCIAL ASPECTS OF ENGINEERING

ENGINEERING N-581
Engineers and Society I

Engineering undertakings have many indirect economic and environmental effects on society. This course traces the parallel developments in ideas and attitudes towards engineering and society.
Lectures: 3 hours per week.
Prerequisite: Completion of 20 courses.

ENGINEERING N-582
Engineers and Society II

A continuation of Engineering N-581, discussing methods of forecasting technological change and assessing its impact on society.
Lectures : 3 hours per week.
Prerequisite: Engineering N-581.

ENGINEERING N-583
The Impact of Science and Technology in Society I

Exposition of the profound influences that (1) science has had on the intellectual life of mankind and (2) technological innovations have had on the organization of society. Part I considers the historical aspects, including the industrial revolution, by thoroughly examining certain highlights. Galileo, Descartes and Newton and the subsequent steady advance in technology. Darwin, evolution and evolutionism. Advances in electricity and magnetism and industrial electrification.
Seminars: 3 hours per week.
Prerequisite: Completion of 20 courses.

ENGINEERING N-584
The Impact of Science and Technology in Society II

This course considers the scientific and technological advances of the 20th century, examines the influences and problems of the present and proceeds to formulate criteria for directing technological innovation. Remote sensing, feedback control and automation. Mass production and quality control. Power and natural resources. Pollution, ecology and population density. Communications technology and the understanding of media. The two cultures and the new Luddites. Utopias.
eminars: 3 hours per week.
Prerequisite: Engineering N-583.

CIVIL ENGINEERING

CIVIL ENGINEERING N-311
Introduction to Building Science

An examination of basic principles relating to the thermal, illuminated and acoustical environment in buildings and the relation between the fabric of the building and the environmental conditions within.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.
Prerequisite: Engineering N-351 previously or concurrently.
NOTE: This course will only be offered if the Building Engineering programme is implemented.

CIVIL ENGINEERING N-421
Engineering Materials

Engineering properties of steel and other selected structural metals; heat treatment of steel and aluminium alloys. Properties of woods. Engineering properties and design of concrete. Bituminous materials. Ceramics. Design characteristics and significance of test results of materials used in engineering construction. Introduction to composite materials.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-221.

CIVIL ENGINEERING N-431 (431)
Geology

Basic principles of physical and structural geology, with emphasis on topics related to Civil Engineering; study of minerals, rocks and soil types, load formation, techniques of air photo interpretations and geological maps.
Lectures: 2 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-221.

CIVIL ENGINEERING N-451
Structural Engineering I

Principles of structural engineering. Analysis of statically determinate structures. Behaviour and design of steel members: beams, columns, and beam-columns. Riveted, bolted, and welded connections.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.
Prerequisite: Engineering N-441, previously or concurrently.

CIVIL ENGINEERING N-452
Structural Engineering II

Approximate methods of building frame analysis. Properties, behaviour, and design of reinforced concrete members. Design of timber members.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.
Prerequisites: Engineering N-441, Civil Engineering N-451.

CIVIL ENGINEERING N-461 (461)
Hydrology

Principles of hydrology and methods of analysis for engineering design. Hydrologic cycles, data collection and interpretation. Precipitation, evaporation, stream flow, floods, groundwater. Practical design examples.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Engineering Mathematics N-371, Engineering N-461; Civil Engineering N-431 previously or concurrently.

CIVIL ENGINEERING N-471 (471)
Surveying

Elementary operations employed in engineering surveying; use, care and adjustment of instruments; linear and angular measurements; traversing; earthwork calculations; theory of errors; horizontal and vertical curves and curve layout; slope stakes and grades, application of surveying methods to city, land and topographic surveying and introduction to advanced surveying techniques; use of digital computers in survey calculations.
Summer school taken before entering second year of study in the B Eng programme.
Lectures and Field Work: 8 hours per day; 6 days per week for 3 weeks.

CIVIL ENGINEERING N-472 (472)
Transportation Engineering

A survey of all transportation modes and introduction to some recent concepts of transportation system planning. Social and economic importance of transportation; development and history of transportation; essential elements of a transportation system, characteristics of rail, road, air, water pipeline and other transportation modes. Transportation planning, land use and traffic, multiple use of right-of-way; team approach; route and terminal location.
Lectures: 3 hours per week.
Prerequisite: Registration in Second Year of the Civil Engineering programme.

CIVIL ENGINEERING N-511
Building Enclosure Design

Design aspects of building enclosures affecting the control of air flow, heat flow, sunlight and other forms of radiant energy, rain and snow, water vapour, noise. Consideration of user requirements, economics and codes.
Lectures: 3 hours per week.

Prerequisite: Completion of 20 courses in the Civil Engineering programme.

CIVIL ENGINEERING N-531 (531)
Soil Mechanics I

Index properties and classification of soils. Weight-volume relationships. Soil structure. Clay mineralogy. Moisture-density relationships. Capillarity. Permeability. Flow nets and seepage. Neutral and effective stresses. Consolidation theory. Shear strength. Frost action. Stresses in soil due to external loads. Laboratory tests to illustrate lecture topics.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Civil Engineering N-421 & N-431.

CIVIL ENGINEERING N-532 (532)
Foundations

Soils, rocks and soil moisture. Soil exploration. Loads, bearing capacity and settlement. Lateral pressures. Foundation drainage and waterproofing. Spread footings. Strip footings. Combined footings. Pile foundations. Caissons. Retaining walls. Sheet piling walls. Braced cofferdams. Cellular cofferdams. Anchors.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Civil Engineering N-452 & N-531.

CIVIL ENGINEERING N-533 (533)
Soil Mechanics II

Selected topics in mechanics of soil media including water flow, rheological behaviour, failure theories, and ideal materials.
Lectures: 3 hours per week.
Prerequisite: Civil Engineering N-531.

CIVIL ENGINEERING N-551
Structural Engineering III

Elastic deformations of structures; elastic and plastic methods of analysis of statically indeterminate structures. Computer applications.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.
Prerequisite: Civil Engineering N-452.

CIVIL ENGINEERING N-552 (553)
Matrix Analysis of Structures

Classical and matrix methods of structural analysis; influence coefficients, transformation matrices. Matrix formulation of the force and of the displacement methods of analysis. Computer applications.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-411, Civil Engineering N-551.

CIVIL ENGINEERING N-553
Advanced Reinforced Concrete Design

Design of reinforced concrete slabs, frames, prefabricated structures, girders, and shells; prestressed concrete structures.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-551.

CIVIL ENGINEERING N-554
Advanced Steel Structures

Contemporary methods for analyzing and designing steel structures. Codes. Comprehensive design problems from the fields of steel buildings, bridges of various types, and cable structures.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-551.

CIVIL ENGINEERING N-561
Hydraulic Structures

Project planning. Selection of type of dam. Foundations and construction materials. Earthfill, rockfill and concrete dams. Spillways and outlet works. Diversion during construction. Maintenance and operation. Sample specifications.
Lectures: 3 hours per week.
Prerequisites: Civil Engineering N-531; Civil Engineering N-461 previously or concurrently.

CIVIL ENGINEERING N-562
Water Resources Engineering I

Open-channel flow and its classifications. Open channels and their properties. Energy and momentum principles. Critical flow; computation and applications. Development of uniform flow and its formulas. Computation of uniform flow. Design of channels for uniform flow. Gradually varied flow: theory and analysis, methods of computation and practical problems.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-461 previously or concurrently.

CIVIL ENGINEERING N-563
Water Resources Engineering II

Planning, development, and design of water resources systems. Socio-economic aspects of water resources projects. Engineering economy in water resources development. Reservoir design and operating rules; flood control. Design of hydraulic control structures including flow measurements. Hydraulic machinery. Introduction to hydro-electric developments. Land and urban drainage. Hydraulic aspects of irrigation. Elements of river engineering. Topics in water quality management.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Civil Engineering N-461 & N-562.

CIVIL ENGINEERING N-571
Highway Design

Design controls and criteria including traffic and highway characteristics and capacity. Location and right-of-way. Earthworks. Geometric design of highways and terminals. Pavement design. Highway design project.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-472.

CIVIL ENGINEERING N-572
Traffic Engineering

Techniques used in transportation planning: economic base, demographic, land use, and traffic studies, origin - destination surveys. Use of mathematical models. Trip generation and distribution modal split, traffic assignment. Emphasis on use of these techniques for problem solving and interaction with other disciplines: planning, economics, technology.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-472.

CIVIL ENGINEERING N-573
Urban Planning

The general planning process. Basic studies: population, economics and land use. Land use planning. Capital improvement programmes and financing. Plan implementation.
Lectures: 3 hours per week.
Prerequisite: Civil Engineering N-472.

CIVIL ENGINEERING N-581 (582)
Water Supply Systems

Basic engineering, biological, chemical, and economic principles of domestic and industrial water supply systems. Development of water sources; water requirements; water quality and public health aspects of water supply; water conveyance; analysis and design of distribution systems; principles of physical and chemical treatment of raw water; pumps and pumping stations; economics of water supply systems.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-371; Engineering N-461 previously or concurrently.

CIVIL ENGINEERING N-582 (583)
Urban Sanitation

Sources, characteristics, and quantities of wastewaters; types of pollution; public health aspects of urban sanitation. Urban hydrology and drainage; design of wastewater collection sys-

tems; pumps and wastewater pumping stations. Application of engineering, physico-chemical, and bacteriological principles to the design of wastewater treatment and disposal plants; solid wastes disposal; stream pollution and control; economics of pollution control.
Lectures: 3 hours per week.
Prerequisite: Engineering N-461.

CIVIL ENGINEERING N-591
Construction Engineering
Study of construction methods, equipment, productivity and safety, project planning, scheduling and control.
Lectures: 3 hours per week.
Prerequisite: Completion of 20 courses in the Civil Engineering programme.

ELECTRICAL ENGINEERING

ELECTRICAL ENGINEERING N-351
Fundamentals of Electrical Engineering
Electric charge, Coulomb's law, electrostatic forces, electric field, Gauss' law, electric potential, stored energy, potential energy. Capacitance, dielectrics, properties of materials in electric fields, magnetic induction, energy stored in magnetic fields. Ohm's law, electrical conduction, electromotive force, inductance, magnetism in matter, time varying fields. Simple electric and magnetic circuits.
Lectures: 3 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Mathematics 005, Physics 002, or equivalents

ELECTRICAL ENGINEERING N-411 (421)
Electronics I
Diodes, rectifiers, smoothing circuits, waveform-shaping circuits. Zener, varactor, and tunnel diodes. Characteristics and operation of field-effect transistors, vacuum tubes, and bipolar transistors. Biasing techniques and small-signal analysis for field-effect transistors. Voltage and current amplifiers and their applications.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-372.
NOTE: After 1975-76, the prerequisites of Electrical Engineering N-411 will be: Engineering N-372: Electrical Engineering N-351 or N-431

ELECTRICAL ENGINEERING N-412 (422)
Electronics II
Biasing techniques and small-signal analysis for bi-polar transistors. Multistage amplifiers. Operational amplifiers. High frequency analysis. Frequency response of amplifiers. Feedback theory. Oscillator circuits.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Electrical Engineering N-411

ELECTRICAL ENGINEERING N-421
Electrical Properties of Solids
Crystal structure, reciprocal lattice, dynamics of crystal lattices, outline of quantum and statistical mechanics, electronic conduction, semi-conductors, superconductivity, dielectrics, magnetism.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-221

ELECTRICAL ENGINNERING N-431 (431)
Electromechanics I
Energy in singly and doubly excited systems; electro-mechanical energy conversion principles; basic features of rotating machines; ideal d.c., polyphase induction, and synchronous machines.
Lectures:3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-372

ELECTRICAL ENGINEERING N-432 (432)
Electromechanics II
More detailed study of d.c., polyphase induction and synchronous machines, including the effects of magnetic saturation; single-phase fractional-horsepower motors; transformers in 3-phase circuits; static rectifiers and inverters; application of thermal networks to the rating of machines.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-411 or N-412; Electrical Engineering N-431

ELECTRICAL ENGINEERING N-441
Linear Network Analysis
Preliminary considerations. The s-plane and system functions. Network topology and equilibrium equations. One and two port networks. The indefinite admittance matrix and its applications. Response to singularity functions. Transient response of networks.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-412; Engineering N-372

ELECTRICAL ENGINEERING N-442
Distributed Parameter Systems
Transmission line theory. Lossless and distortionless lines. The transmission line on a two port device. Scattering parameters. Impedance transfer, Smith chart, stub matching, standing waves. Derivation of partial differential equations for various physical systems. Methods of solution for elliptic, parabolic and hyperbolic equations. Applications, including rectangular wave guides.
Lectures: 3 hours per week.
Prerequisites: Electrical Engineering N-441 & N-451

ELECTRICAL ENGINEERING N-451
Electromagnetic Field Theory
The field concept. Maxwell's equation. Boundary conditions. Power and energy. The electrostatic field. Electrostatic potential. The concept of capacitance. Conformal mapping in electrostatics. Polarization. The concept of local field in matter. The magnetostatic field. The Biot-Savart law. The scalar magnetic potential. Plane waves. Total internal reflection. The Brewster angle.
Lectures: 3 hours per week.
Tutorial: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-332 & N-352; Electrical Engineering N-351.

ELECTRICAL ENGINEERING N-501 (501)
Electrical Engineering Seminar
In the second term of the final year, students in Electrical Engineering hold meetings with faculty members. These meetings are organized to provide the student with an opportunity to exercise his ability to present and to defend his thoughts on topics of his own choice. Students will be encouraged to devote some of their discussions to such topics as continuing professional education, professional societies, organization of engineering employment, and professional ethics.
Seminars: 2 hours per week.
Prerequisite: Completion of 17 courses

ELECTRICAL ENGINEERING N-511 (521)
Pulse Circuits
A continuation of the material of Electrical Engineering N-412; wave-shaping circuits and digital logic circuits.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Engineering Mathematics N-412; Electrical Engineering N-412

ELECTRICAL ENGINEERING N-512
Design of Logic and Switching Circuits
Combinational logic and Boolean algebra for the description and analysis of electrical switching circuits. Transistor logic elements and their practical limitations. Analysis, synthesis and minimization of combinational and sequential circuits.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-411
NOTE: This course is no longer offered. See Electrical Engineering N-513 & N-514.

Prerequisite: Completion of 20 courses in the Civil Engineering programme.

CIVIL ENGINEERING N-531 (531)
Soil Mechanics I

Index properties and classification of soils. Weight-volume relationships. Soil structure. Clay mineralogy. Moisture-density relationships. Capillarity. Permeability. Flow nets and seepage. Neutral and effective stresses. Consolidation theory. Shear strength. Frost action. Stresses in soil due to external loads. Laboratory tests to illustrate lecture topics.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Civil Engineering N-421 & N-431.

CIVIL ENGINEERING N-532 (532)
Foundations

Soils, rocks and soil moisture. Soil exploration. Loads, bearing capacity and settlement. Lateral pressures. Foundation drainage and waterproofing. Spread footings. Strip footings. Combined footings. Pile foundations. Caissons. Retaining walls. Sheet piling walls. Braced cofferdams. Cellular cofferdams. Anchors.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Civil Engineering N-452 & N-531.

CIVIL ENGINEERING N-533 (533)
Soil Mechanics II

Selected topics in mechanics of soil media including water flow, rheological behaviour, failure theories, and ideal materials.
Lectures: 3 hours per week.
Prerequisite: Civil Engineering N-531.

CIVIL ENGINEERING N-551
Structural Engineering III

Elastic deformations of structures; elastic and plastic methods of analysis of statically indeterminate structures. Computer applications.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.
Prerequisite: Civil Engineering N-452.

CIVIL ENGINEERING N-552 (553)
Matrix Analysis of Structures

Classical and matrix methods of structural analysis; influence coefficients, transformation matrices. Matrix formulation of the force and of the displacement methods of analysis. Computer applications.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-411, Civil Engineering N-551.

CIVIL ENGINEERING N-553
Advanced Reinforced Concrete Design

Design of reinforced concrete slabs, frames, prefabricated structures, girders, and shells; prestressed concrete structures.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-551.

CIVIL ENGINEERING N-554
Advanced Steel Structures

Contemporary methods for analyzing and designing steel structures. Codes. Comprehensive design problems from the fields of steel buildings, bridges of various types, and cable structures.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-551.

CIVIL ENGINEERING N-561
Hydraulic Structures

Project planning. Selection of type of dam. Foundations and construction materials. Earthfill, rockfill and concrete dams. Spillways and outlet works. Diversion during construction. Maintenance and operation. Sample specifications.
Lectures: 3 hours per week.
Prerequisites: Civil Engineering N-531; Civil Engineering N-461 previously or concurrently.

CIVIL ENGINEERING N-562
Water Resources Engineering I

Open-channel flow and its classifications. Open channels and their properties. Energy and momentum principles. Critical flow; computation and applications. Development of uniform flow and its formulas. Computation of uniform flow. Design of channels for uniform flow. Gradually varied flow: theory and analysis, methods of computation and practical problems.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-461 previously or concurrently.

CIVIL ENGINEERING N-563
Water Resources Engineering II

Planning, development, and design of water resources systems. Socio-economic aspects of water resources projects. Engineering economy in water resources development. Reservoir design and operating rules; flood control. Design of hydraulic control structures including flow measurements. Hydraulic machinery. Introduction to hydro-electric developments. Land and urban drainage. Hydraulic aspects of irrigation. Elements of river engineering. Topics in water quality management.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Civil Engineering N-461 & N-562.

CIVIL ENGINEERING N-571
Highway Design

Design controls and criteria including traffic and highway characteristics and capacity. Location and right-of-way. Earthworks. Geometric design of highways and terminals. Pavement design. Highway design project.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-472.

CIVIL ENGINEERING N-572
Traffic Engineering

Techniques used in transportation planning: economic base, demographic, land use, and traffic studies, origin - destination surveys. Use of mathematical models. Trip generation and distribution modal split, traffic assignment. Emphasis on use of these techniques for problem solving and interaction with other disciplines: planning, economics, technology.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Civil Engineering N-472.

CIVIL ENGINEERING N-573
Urban Planning

The general planning process. Basic studies: population, economics and land use. Land use planning. Capital improvement programmes and financing. Plan implementation.
Lectures: 3 hours per week.
Prerequisite: Civil Engineering N-472.

CIVIL ENGINEERING N-581 (582)
Water Supply Systems

Basic engineering, biological, chemical, and economic principles of domestic and industrial water supply systems. Development of water sources; water requirements; water quality and public health aspects of water supply; water conveyance; analysis and design of distribution systems; principles of physical and chemical treatment of raw water; pumps and pumping stations; economics of water supply systems.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-371; Engineering N-461 previously or concurrently.

CIVIL ENGINEERING N-582 (583)
Urban Sanitation

Sources, characteristics, and quantities of wastewaters; types of pollution; public health aspects of urban sanitation. Urban hydrology and drainage; design of wastewater collection sys-

tems; pumps and wastewater pumping stations. Application of engineering, physico-chemical, and bacteriological principles to the design of wastewater treatment and disposal plants; solid wastes disposal; stream pollution and control; economics of pollution control.
Lectures: 3 hours per week.
Prerequisite: Engineering N-461.

CIVIL ENGINEERING N-591
Construction Engineering
Study of construction methods, equipment, productivity and safety, project planning, scheduling and control.
Lectures: 3 hours per week.
Prerequisite: Completion of 20 courses in the Civil Engineering programme.

ELECTRICAL ENGINEERING

ELECTRICAL ENGINEERING N-351
Fundamentals of Electrical Engineering
Electric charge, Coulomb's law, electrostatic forces, electric field, Gauss' law, electric potential, stored energy, potential energy. Capacitance, dielectrics, properties of materials in electric fields, magnetic induction, energy stored in magnetic fields. Ohm's law, electrical conduction, electromotive force, inductance, magnetism in matter, time varying fields. Simple electric and magnetic circuits.
Lectures: 3 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Mathematics 005, Physics 002, or equivalents

ELECTRICAL ENGINEERING N-411 (421)
Electronics I
Diodes, rectifiers, smoothing circuits, waveform-shaping circuits. Zener, varactor, and tunnel diodes. Characteristics and operation of field-effect transistors, vacuum tubes, and bipolar transistors. Biasing techniques and small-signal analysis for field-effect transistors. Voltage and current amplifiers and their applications.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-372.
NOTE: After 1975-76, the prerequisites of Electrical Engineering N-411 will be: Engineering N-372; Electrical Engineering N-351 or N-431

ELECTRICAL ENGINEERING N-412 (422)
Electronics II
Biasing techniques and small-signal analysis for bi-polar transistors. Multistage amplifiers. Operational amplifiers. High frequency analysis. Frequency response of amplifiers. Feedback theory. Oscillator circuits.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Electrical Engineering N-411

ELECTRICAL ENGINEERING N-421
Electrical Properties of Solids
Crystal structure, reciprocal lattice, dynamics of crystal lattices, outline of quantum and statistical mechanics, electronic conduction, semi-conductors, superconductivity, dielectrics, magnetism.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-221

ELECTRICAL ENGINNERING N-431 (431)
Electromechanics I
Energy in singly and doubly excited systems; electro-mechanical energy conversion principles; basic features of rotating machines; ideal d.c., polyphase induction, and synchronous machines.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-372

ELECTRICAL ENGINEERING N-432 (432)
Electromechanics II
More detailed study of d.c., polyphase induction and synchronous machines, including the effects of magnetic saturation; single-phase fractional-horsepower motors; transformers in 3-phase circuits; static rectifiers and inverters; application of thermal networks to the rating of machines.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-411 or N-412; Electrical Engineering N-431

ELECTRICAL ENGINEERING N-441
Linear Network Analysis
Preliminary considerations. The s-plane and system functions. Network topology and equilibrium equations. One and two port networks. The indefinite admittance matrix and its applications. Response to singularity functions. Transient response of networks.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-412; Engineering N-372

ELECTRICAL ENGINEERING N-442
Distributed Parameter Systems
Transmission line theory. Lossless and distortionless lines. The transmission line on a two port device. Scattering parameters. Impedance transfer, Smith chart, stub matching, standing waves. Derivation of partial differential equations for various physical systems. Methods of solution for elliptic, parabolic and hyperbolic equations. Applications, including rectangular wave guides.
Lectures: 3 hours per week.
Prerequisites: Electrical Engineering N-441 & N-451

ELECTRICAL ENGINEERING N-451
Electromagnetic Field Theory
The field concept. Maxwell's equation. Boundary conditions. Power and energy. The electrostatic field. Electrostatic potential. The concept of capacitance. Conformal mapping in electrostatics. Polarization. The concept of local field in matter. The magnetostatic field. The Biot-Savart law. The scalar magnetic potential. Plane waves. Total internal reflection. The Brewster angle.
Lectures: 3 hours per week.
Tutorial: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-332 & N-352; Electrical Engineering N-351.

ELECTRICAL ENGINEERING N-501 (501)
Electrical Engineering Seminar
In the second term of the final year, students in Electrical Engineering hold meetings with faculty members. These meetings are organized to provide the student with an opportunity to exercise his ability to present and to defend his thoughts on topics of his own choice. Students will be encouraged to devote some of their discussions to such topics as continuing professional education, professional societies, organization of engineering employment, and professional ethics.
Seminars: 2 hours per week.
Prerequisite: Completion of 17 courses

ELECTRICAL ENGINEERING N-511 (521)
Pulse Circuits
A continuation of the material of Electrical Engineering N-412; wave-shaping circuits and digital logic circuits.
Lectures: 3 hours per week.
Laboratory: 3 hours per week.
Prerequisites: Engineering Mathematics N-412; Electrical Engineering N-412

ELECTRICAL ENGINEERING N-512
Design of Logic and Switching Circuits
Combinational logic and Boolean algebra for the description and analysis of electrical switching circuits. Transistor logic elements and their practical limitations. Analysis, synthesis and minimization of combinational and sequential circuits.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-411
NOTE: This course is no longer offered. See Electrical Engineering N-513 & N-514.

ELECTRICAL ENGINEERING N-513
Design of Logic and Switching Circuits I

Boolean Algebra and its application to electrical switching circuits. Design of transistor gates and their practical limitations. Analysis, design and optimization of combinational circuits. Application of combinational circuits to electronic systems and instrumentation.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-411.
NOTE: Students having credit for Electrical Engineering N-512 may not take this course for credit.

ELECTRICAL ENGINEERING N-514
Design of Logic and Switching Circuits II

Design of flip flops and other logic elements for sequential circuits. Characterization, analysis, design and optimization of sequential circuits. Applications of sequential circuits to electronic systems and instrumentation.
Lectures: 3 hours per week.
Prerequisite: Electrical Engineering N-513

ELECTRICAL ENGINEERING N-521
Semiconductor Physics

Electrons in periodic lattices, intrinsic and extrinsic semiconductors; p-n junctions, rectifers and transistors; material and devices technology.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-421

ELECTRICAL ENGINEERING N-522
Semiconductor Devices Design

Junction and field-effect transistors; surface effects and surface-controlled devices; other semiconductor devices; device technology.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-521

ELECTRICAL ENGINEERING N-531 (571)
Electrical Power Engineering

Inductance, capacitance, resistance of polyphase transmission lines; current and voltage relations of transmission lines; load flow studies; symmetrical and unsymmetrical faults; power system stability.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate week.
Prerequisite: Electrical Engineering N-431

ELECTRICAL ENGINEERING N-532 (532)
Generalized Machine Theory

Linear transformation to electric circuits analysis; power invariant transformations; primitive machines; dynamic and steady-state response of machines.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-431
NOTE: This course is no longer offered.

ELECTRICAL ENGINEERING N-533
Thyristor Power Applications

Circuits and operating principles of phase-controlled converters; external performance characteristics; harmonic content of d.c. output voltage a.c. input current; dual converters; converters as power amplifiers. Application to variable speed drives; d.c. machine dynamics, feedback control.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering N-472; Electrical Engineering N-411 & N-431

ELECTRICAL ENGINEERING N-541
Modern Filter Design

Image parameters, constant-k and m-derived filters. The approximation problem. Design of Butterworth, Tchebyscheff, and Bessel filters as terminated lossless networks. Design of constant-resistance all-pass networks. Design of active-RC filters using operational amplifiers.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-441.

ELECTRICAL ENGINEERING N-542
Digital Filters

Introduction to recursive and non-recursive digital filters; realization methods using the z-transform calculus; amplitude and phase characteristics and relevant approximations and transformations; comparison of digital with conventional filters; application of digital filters.
Lectures: 3 hours per week.
Prerequisite: Electrical Engineering N-441.

ELECTRICAL ENGINEERING N-543
Topics in Network Theory

The course content may vary from year to year and will be chosen from such current areas as computer aided design, inductorless filter design, etc.
Lectures: 3 hours per week.
Prerequisite: Specified annually by the Department, depending on topics included.

ELECTRICAL ENGINEERING N-551
Lasers and Masers

Electric dipole transitions. Lifetime and collision broadening. Magnetic dipole transitions. Fundamentals of maser amplification. Rate equations. Microwave solid state masers. Optical resonators and lens waveguides. Doppler broadening. Optical masers (lasers).
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Electrical Engineering N-451.

ELECTRICAL ENGINEERING N-552 (552)
Microwave Engineering

The dipole antenna. Wave propagation in guides. Impedance transformation and matching. Waveguide couplers. Cavity resonators. Microwave filter design. Ferrite devices. The reflex klystron. The magnetron. The travelling wave tube.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Electrical Engineering N-442 & N-451.

ELECTRICAL ENGINEERING N-561 (561)
Communication Theory

Principles of amplitude, angle of pulse modulation. Components including modulators, mixers, limiters and demodulators. Representative examples of complete transmission systems. Qualitative treatment of modulation systems in the presence of noise.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-412.

ELECTRICAL ENGINEERING N-562
Statistical and Digital Communications

Transmissions and filtering of random signals, analysis of modulation systems, in particular Pulse Code Modulation, Phase Shift Keying, Frequency Shift Keying, etc., an introduction to noise analysis, information theory and coding.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-371; Electrical Engineering N-561.

ELECTRICAL ENGINEERING N-581
Electrical Engineering Project

The Electrical Engineering project provides an opportunity for each student to carry out a small design project associated with one or more of the specialist elective courses, under the supervision of a faculty member. The nature of the project selected should be such as to require independent study of current technical literature. When feasible the designs will be assessed in the laboratory. Each student is to present a complete report at the end of the project. Equivalent laboratory time: 6 hours per week.
Prerequisite: Registration in final year.

MECHANICAL ENGINEERING

MECHANICAL ENGINEERING N-321
Strength and Failure in Metals

The service capabilities of alloys and their relationship to microstructure as produced by thermal and mechanical treatments; strengthening mechanisms, composite materials. Modes of failure of materials: brittle fracture, fatigue, wear, creep, corrosion, radiation damage.
Lectures: 2 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Engineering N-221.
NOTE:Students who have credit for Mechanical Engineering N-422 may not take this course for credit.

MECHANICAL ENGINEERING N-401
Seminar

Meetings involving students and faculty members to provide the students with an opportunity to develop their communications skill by presenting and defending their thoughts on a wide range of topics.
Seminar: 1 hour per week for 2 terms.
Prerequisite: Registration in the Mechanical Engineering programme.

MECHANICAL ENGINEERING N-411
Mechanical Engineering Laboratory I

Fundamentals of manufacturing processes and their limitations, topics will include machine shop practice, forming and machining processes, casting processes, plastics, non-conventional machining techniques. Laboratory includes machining simple parts in the machine shop, preparation of shop drawings; field trips to local industries.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Engineering N-212 previously or concurrently.

MECHANICAL ENGINEERING N-421
Heat Treatment of Metals

Science and technology of heat treating of metals: the effect of micro-structural changes on the properties of alloys. Solid solution alloys, diffusion. Equilibrium phase diagrams. Kinetics of phase transformations. Thermomechanical treatment of steels. Precipitation hardening. Solidification.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-221.
NOTE: This course is no longer offered. See Mechanical Engineering N-423.

MECHANICAL ENGINEERING N-422
Mechanical Properties of Metals

The mechanisms of deformation and softening and the effects of processing variables on the mechanical properties of metals: cold working, annealing, and hot working of metals. The service capabilities of alloys and their relationship to thermomechanical processing: creep, fracture, fatigue and corrosion of metals and materials. Composite materials.
Lectures: 3 hours per week.
Tutorial: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-221.
NOTE: This course is no longer offered. See Mechanical Engineering N-321.

MECHANICAL ENGINEERING N-423
Thermal Treatment and Processing of Metals.

Science and technology of thermal treatments for controlling the internal structure and the external shape of metals. Equilibrium phase diagrams. Kinetics of phase transformations, diffusion. Thermomechanical treatments of steel. Precipitation hardening. Solidification. Casting. Welding. Non-destructive testing. Finishing processes.
Lectures: 3 hours per week.
Laboratory: 2 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Engineering N-221.
NOTE: Students who have credit for Mechanical Engineering N-421 may not take this course for credit.

MECHANICAL ENGINEERING N-441
Kinematics of Mechanisms

Geometry of motion and mobility criteria; kinematic analysis and synthesis of linkages; theory of spur gears, helical, worm and bevel gearing; gear trains and differentials; cam kinematics.
Lectures: 2 hours per week.
Laboratory: 2 hours per week, alternate weeks.
Tutorial: 2 hours per week, alternate weeks.
Prerequisite: Engineering Mathematics N-332.

MECHANICAL ENGINEERING N-442
Dynamics of Machines

Kinematic analysis of space mechanisms; static and dynamic analysis of planar mechanisms and gear trains; dynamic analysis of space mechanisms; gyroscopic forces; balancing of rotating and reciprocating machinery.
Lectures: 2 hours per week.
Laboratory: 2 hours per week, alternate weeks.
Tutorial: 2 hours per week, alternate weeks.
Prerequisite: Mechanical Engineering N-441.

MECHANICAL ENGINEERING N-451 (454)
Thermodynamics II

Thermodynamic functions and equations, relationships between properties; behaviour of gases and their nonreactive mixtures; combustion. Applications of thermodynamics to power production and utilization systems.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Tutorial: 1 hour per week.
Prerequisite: Engineering N-351.

MECHANICAL ENGINEERING N-452 (455)
Heat Transfer I

Steady state and transient heat conduction, numerical methods for two-dimensional steady state heat conduction. Radiation heat exchange between black bodies, between grey bodies and from gases, vapours and flames.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering Mathematics N-411.

MECHANICAL ENGINEERING N-501
Mechanical Engineering Seminar

Meetings similar to those in Mechanical Engineering N-401; students will be encouraged to devote some of their discussions to such topics as continuing professional education, professional societies, organization of engineering employment, and professional ethics.
Seminar: 1 hour per week for 2 terms.
Prerequisite: Registration in final year.

MECHANICAL ENGINEERING N-511
Mechanical Engineering Laboratory II

Current design practices are studied by analysis of and experimentation with devices and machines encountered in mechanical engineering practice.
Laboratory: 3 hours per week.
Tutorial: 1 hour per week.
Prerequisite: Mechanical Engineering N-411.

MECHANICAL ENGINEERING N-521
Deformation and Mechanical Shaping of Metals.

The mechanisms of deformation and softening and the effects of processing variables on the mechanical properties of metals: cold working, annealing and hot working of metals. The effects of mechanical parameters and materials properties on the processing and on the product. Mechanical forming: shear line theory, extruding, forging, rolling, drawing. Metal cutting: machineability, metrology. Powder technology. Shaping of plastics; extrusion, molding, vacuum, forming, lamination.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-221

MECHANICAL ENGINEERING N-541
Mechanical Engineering Design I

Concepts in design; failure of mechanical ele-

ments under dynamic loading; shafting; bolted and welded joints; anti-friction and journal bearings; design of gears.
Lectures: 2 hours per week.
Laboratory: 2 hours per week.
Prerequisites: Engineering N-212 and N-441; Mechanical Engineering N-442

MECHANICAL ENGINEERING N-542 (542)
Machine Design II

Design of gears; design of gear drives; introduction to design of machine tools; introduction to optimum design of mechanical systems; technical talks on selected topics in mechanical design; machine design project.
Lecture: 1½ hours per week.
Project: 6 hours per week equivalent laboratory time.
Prerequisite: Mechanical Engineering N-541
NOTE: This course is no longer offered. See Mechanical Engineering N-545.

MECHANICAL ENGINEERING N-543 (543)
Mechanical Vibrations

Transient vibrations under impulsive shock, and arbitrary excitation; normal modes, free and forced vibrations. Multi-degree of freedom systems, influence coefficients, orthogonality principle, numerical methods. Continuous systems; longitudinal torsional and flexural free and forced vibrations of prismatic bars. Lagrange's equations. Non-linear vibrations. Vibration measurements.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering Mathematics N-411, Engineering N-372, Mechanical Engineering N-442

MECHANICAL ENGINEERING N-544
Mechanical Engineering Design II

Standards and codes in plant engineering and pressure vessel design; principles of design of jigs and fixtures; design of vibration dampers and noise control; design of clutches and brakes. Laboratory work includes a complete project with detail drawings and analysis.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Mechanical Engineering N-541

MECHANICAL ENGINEERING N-545
Machine Design

Design of springs; design of gear and hydraulic drives, design for hydrodynamic and hydrostatic lubrication; optimum design of mechanical systems, design strategy, value and merit function, maximizing and minimizing procedures. Laboratory work includes an advanced design project representative of those encountered in industry.
Lectures: 2 hours per week.
Laboratory: 3 hours per week.
Prerequisite: Mechanical Engineering N-541
NOTE: Students who have credit for Mechanical Engineering N-542 may not take this course for credit.

MECHANICAL ENGINEERING N-551 (557)
Thermodynamics III

A continuation of Thermodynamics II including applications to more complex power production and utilization systems, gas vapour mixtures and development of property data.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Mechanical Engineering N-451

MECHANICAL ENGINEERING N-552 (558)
Heat Transfer II

Review of momentum transfer, free and forced convection heat transfer, dimensional analysis as applied to convection heat transfer configurations, heat exchangers, introduction to mass transfer.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisite: Engineering N-461, Mechanical Engineering N-452

MECHANICAL ENGINEERING N-553 (554)
Environmental Control

The effect of air temperature and humidity on physiological comfort, overall heat-transmission coefficients across building sections, heating load calculations, the effect of solar radiation on air-conditioning load, cooling load calculations, heating, air-conditioning and ventilating systems, design of piping and duct arrangement.
Lectures: 3 hours per week.
Prerequisites: Mechanical Engineering N-452 & N-551

MECHANICAL ENGINEERING N-554
Thermodynamics IV

Thermodynamics of reactive systems; systems involving external forces; direct energy conversion. Thermodynamic probability, distribution laws and applications of quantum-statistical mechanics.
Lectures: 3 hours per week.
Prerequisites: Engineering Mathematics N-371; Mechanical Engineering N-551
NOTE: This course is no longer offered.

MECHANICAL ENGINEERING N-555
Introduction to Nuclear Engineering

Nuclear engineering principles. Nuclear reactions and reactors; control, heat removal and safety. Processing and properties of reactor fuels, moderators and coolants. Types of power reactors; radiation safety and protection.
Lectures: 3 hours per week.
Prerequisites: Mechanical Engineering N-451 & N-452

MECHANICAL ENGINEERING N-561 (551)
Gas Dynamics

Review of one-dimensional, compressible flow. Normal and oblique shock waves; Prandtl-Meyer flow; combined effects in one-dimensional flow; non-ideal gas effects; multi-dimensional flow; linearized flow; method of characteristics. Selected experiments in supersonic flow, convergent-divergent nozzles, hydraulic analogue and Fanno tube.
Lectures: 3 hours per week.
Laboratory: 3 hours per week, alternate weeks.
Prerequisites: Engineering N-461, Mechanical Engineering N-451

MECHANICAL ENGINEERING N-562 (553)
Fluid Machinery

Momentum analysis for fluid propulsion, moment-of-momentum and Euler turbine equations, thermodynamics of gas flow, analysis of blades and impellers, performance of incompressible and compressible turbo-machinery.
Lectures: 3 hours per week.
Prerequisites: Engineering N-461, Mechanical Engineering N-451

MECHANICAL ENGINEERING N-581 (581)
Design or Experimental Project

A mechanical engineering design, simulation or experimental project appropriate to the senior level carried out under the supervision of a faculty member. A complete report is required at the end of the project.
Equivalent Laboratory time: 6 hours per week.
Prerequisite: Registration in final year.
NOTE: Credit will only be given for one of Mechanical Engineering N-542 and N-581

71.8 Bachelor of Computer Science Programme

The programme leading to the Bachelor of Computer Science degree is offered at the Sir George Williams campus.

71.8.1 Admission Requirements

Applications for admission to the BCompSc programme are submitted to the Admissions Office at the Sir George Williams campus.

General Admission requirements are listed §13.

Specific requirements are the CEGEP level courses listed below, or the equivalent

	CEGEP
Mathematics	101
	103
	105
	203

In addition, the following specific requirements exist for the various Options, and applicants are required to indicate their choice of Option in their application.

(1) The General Science and the Electronics/Systems Options:

	CEGEP
Biology	301
Chemistry	101
	201
Physics	101 or 102
	201 or 202
	301 or 302

(2) The General Business Option:

	CEGEP
Mathematics	205

NOTE: It is highly desirable that students have credit for Data Processing 901, or its equivalent, before undertaking study in any of the three Options. However, applicants not having this credit will be considered, but are strongly advised to obtain it before entering the undergraduate programme, possibly during the summer in which their application is under consideration.

71.8.2 CURRICULUM FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

The university offers a programme leading to the degree of Bachelor of Computer Science with three Options, namely General Science, Electronics/Systems and General Business. To be recommended for the degree of Bachelor of Computer Science, students must satisfactorily complete an approved programme of 90 credits. In assessing this total, each course of the student's programme offered by the Faculty of Engineering is assigned 3 credits, except Computer Science N-491 which is assigned 6 credits. Forty-two of the credits required must be obtained from the core requirements specified below while the remainder must be obtained from courses specified for one of the three Options.

71.8.3 PROGRAMMES OF STUDY

Programmes of study are available in both the Day and Evening Divisions as described below.

(1) Day Division

The courses of all Options are offered in the Day Division and students can complete the degree requirements in three years of study by taking the normal load of 30 credits per year.

(2) Evening Division

The courses of the General Science and General Business Options are all offered in the Evening Division, allowing the completion of the degree requirements in that Division. However, as the Electronics/Systems Option includes courses offered only in the Day Division in the Bachelor of Engineering programme, students must transfer to the Day Division to complete their last two years of study in that Option. Courses offered in the Evening Division are marked† in the following lists.

71.8.4 ACADEMIC REGULATIONS

Students should refer to the section presenting the Academic Regulations of the university, §16

71.8.5 COURSE REQUIREMENTS

To be recommended for the degree of Bachelor of Computer Science, students must satisfactorily complete the following core courses as well as those specified below for their chosen Option.

Comp Sc N-220†
Introduction to Discrete Structures
Comp Sc N-221†
Introduction to Assembly Language Programming
Comp Sc N-222†
Introduction to Business Programming
Comp Sc N-223†
Computer Languages
Comp Sc N-301†
Computer Organization
Comp Sc N-302†
Computer Operating Systems
Comp Sc N-312†
Data and File Structures I
Comp Sc N-413†
Data and File Structures II
Comp Sc N-491†
Computer Science Project

Three credits in Numerical Calculus, such as Comp Sc N-320†, Mathematics N-311†, or Engineering Mathematics N-491.

An additional nine credits in Computer Science†.

General Science Option

In addition to the core courses shown above, the following courses must be completed satisfactorily.

Mathematics N-241†
Introductory Mathematical & Applied Statistics
Mathematics N-261†
Advanced Calculus
Mathematics N-281†
Linear Algebra I
Electives: An additional three credits in Computer Science †

Twenty seven credits from the Natural or Social Sciences, Commerce and Administration, or Engineering.

Electronics/Systems Option

In addition to the core courses shown above, the following courses must be completed satisfactorily.

E Math N-312†
Calculus & Differential Equations
E Math N-332†
Matrices & Advanced Calculus
E Math N-352†
Complex Variables
E Math N-371†
Applied Probability & Statistics
E Math N-412
Transform Calculus & Advanced Differential Equations
Engin N-371†
Physical Systems & Measurements I
Engin N-372†
Physical Systems & Measurements II

Engin N-472
Fundamentals of Control Systems
Elec Eng N-351*†
Fundamentals of Electrical Engineering
Elec Eng N-411
Electronics I
Elec Eng N-412
Electronics II
Elec Eng N-441
Linear Network Analysis
Elec Eng N-511
Pulse Circuits
Comp Sc N-430†
Logical Design & Switching Theory
Electives: Two courses chosen from the following (Students completing First Year before September 1975 will choose three of the following courses):
Comp Sc N-340†
Special Purpose Computer Systems
Engin N-471
Physical Systems & Measurements III
Engin N-571
Time Domain Analysis & Design
Engin N-572
Studies in System Optimization
Engin N-574
Digital Computers in Systems
Elec Eng N-541
Modern Filter Design
Elec Eng N-542
Digital Filters
Elec Eng N-543
Topics in Network Theory
Elec Eng N-561
Communication Theory
** For students entering Second Year after September 1975*

General Business Option

In addition to the core courses shown above, the following courses must be completed satisfactorily.
Accountancy 213†
Financial I
Accountancy 214†
Financial II
Accountancy 218†
Managerial I
Accountancy 425†
Managerial II
Economics N-209†
Introduction to Microeconomics
Economics N-210†
Introduction to Macroeconomics
Finance 215†
Introduction to Finance
Finance 314†
Financial Management
Management 213†
Foundations of Behaviour I
Management 214†
Foundations of Behaviour II
Marketing 213†
The Marketing Process (Introductory)
Marketing 350†
Marketing Management
QM 243†
Introductory Business Statistics I
QM 244†
Introductory Business Statistics II
QM 313†
Managerial Operations Research I
QM 314†
Managerial Operations Research II

†offered in both Day and Evening Divisions

71.8.6 Honours Programme

An honours degree indicates specialization within a field and high academic standing. In order to qualify for an honours degree a student must meet all the academic qualifications and comply with the regulations set forth below.

1. A candidate for an honours degree should indicate such intention at registration, and consult the honours representative of the department as soon as possible. His honours standing will be reviewed annually. However, a student who has followed the courses prescribed for the honours programme, and has met all the requirements, may enter the programme with the approval of the department chairman at any time before beginning the final 30 credits. No retroactive approval of entry may be granted.
2. An honours student must meet the general degree requirements as well as the specific requirements for an honours degree, and must obtain at least a 'C' average over the total degree programme. Failure in any course will mean suspension from the honours programme. Reinstatement is possible only by recommendation by the honours representative.
3. An honours student must obtain a 'B' average with no grade lower than 'C' in all courses in the basic honours programme.
4. A student who enters with advanced standing may apply pro tanto credits, which are applicable, to the honours degree requirements, upon approval by the department.
5. A student shall be allowed to qualify for only one honours degree.
6. Honours standing in any programme is granted upon graduation only with the approval of the Senate.

71.8.7 HONOURS COMMITTEE

Professors
N. E. SMITH
J. STEWART

Associate Professor
R. B. ANGEL, *Chairman*

Assistant Professors
J. W. ATWOOD
E. B. MARKLAND

Secretary
MONA OSBORNE

Departmental Representative
J. W. ATWOOD

71.8.8 REQUIREMENTS FOR HONOURS

The following courses constitute an honours programme in Computer Science provided the student maintains the required academic standing:

First Year:
Computer Science N-220, N-221, N-222, N-223*; Mathematics N-241, N-261, N-281
**Students in First Year prior to 1974-75 will replace Computer Science N-223 with Computer Science N-310.*

Second Year:
Computer Science N-301, N-302, N-303, N-311, N-312; Mathematics N-351, N-372; Computer Science N-320 or Mathematics N-311.

Third Year:
Computer Science N-340, N-413, N-491; Computer Science N-421 or N-430; three credits from Computer Science N-405, N-414, N-440 or N-450; six credits from Mathematics N-331, N-341, N-342, N-343, N-352 or N-434.

71.9 Department of Computer Science

Professor and Chairman of the Department
H. STANLEY HEAPS

Associate Professors
WOJCIECH M. JAWORSKI
K. V. LEUNG
GRAHAM MARTIN
J. McKAY

Assistant Professors
J. WILLIAM ATWOOD
T. D. BUI
A. W. COLIJN
TERRIL FANCOTT
A. RUDMIK
C. Y. SUEN

Lecturers
M. M. EL-DIWANY
WILFRIED G. PROBST

71.9.1 DEPARTMENT OF COMPUTER SCIENCE

Computer Science is concerned with the systematic study of information. This includes both the art and science of information representation and processing, particularly the techniques of processing scientific and business information through the use of electronic computers. The many fields of computer science involve such problems as the design of computer systems, the design of suitable languages and techniques for communication with computers, economic use of computers to control industrial processes, and efficient use of computers in many branches of business and commerce.

The programme offers three Options: *General Science, General Business, and Electronics/Systems.* Students must include a fixed set of core courses, but may choose an Option according to which specialized knowledge they wish to obtain in order to supplement their general background in computer science. The General Science Option is designed to give students an understanding of computer applications in scientific fields. The General Business Option is similarly designed for students who wish to have an emphasis on business applications. The Electronics/Systems Option is intended for those students who wish to place some emphasis on computer architecture and design.

The Computer Science Department is established within the Faculty of Engineering. However, the university-wide Computer Science Committee ensures the interdisciplinary character of the Computer Science programme.

71.9.2 COURSE DESCRIPTIONS

COMPUTER SCIENCE N-211 (211)
Introduction to Computers and Computing

An introduction to the essential features of computers and computing systems. Problem solving, algorithms, and flowcharts. Detailed specifications of Fortran with numerical and non-numerical applications.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
NOTE: Students who have credit for Computer Science 011 or equivalent may not take this course for credit.

COMPUTER SCIENCE N-220
Introduction to Discrete Structures

Introduction to some fundamental algebraic, logical and combinatoric concepts such as: Set algebra; mappings and relations. Algebraic structures; semigroups and groups. Elements of the theory of directed and undirected graphs. Boolean algebra and propositional logic. Applications of these structures to various areas of computer science.
Lectures: 3 hours per week, 1 term.
Prerequisites: Computer Science 011, or equivalent, previously or concurrently; Mathematics 002, or equivalent

COMPUTER SCIENCE N-221
Introduction to Assembly Language Programming

Computer structure, machine language, instruction execution, addressing techniques and digital representation of data. symbolic coding and assembly systems; macro definition and generation. Programme segmentation and linkage; loading. Systems and utility programmes; programming techniques. Introduction to the facilities provided by operating systems.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisite: Computer Science 011, or equivalent

COMPUTER SCIENCE N-222
Introduction to Business Programming

Introduction to the data processing field and use of a business oriented language (e.g. COBOL). Concepts of mass storage characteristics. File organization and handling; sorting. Basic business applications.

Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisite: Computer Science 011, or equivalent
NOTE: Students who have credit for Computer Science N-212 or Quantitative Methods N-423 may not take this course for credit.

COMPUTER SCIENCE N-223
Computer Languages

Achievement of proficiency in programming techniques using high-level languages. Definition of various programming languages including procedure-oriented, list processing, and simulation languages. Specification of syntax and semantics. Basic properties of programming language. The goal of precision programming and its attainment through structured programming techniques.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisites: Computer Science 011, Mathematics 005, or equivalents; Computer Science N-220

COMPUTER SCIENCE N-301
Computer Organization

Organization, logic design and components of a digital computer. Basic digital circuits. Data representation and transer. Digital arithmetic. Digital storage and accessing. Control functions. Input-output devices and channels. System organization. Reliability. Description and simulation techniques.
Lectures: 3 hours per week, 1 term.
Prerequisites: Computer Science N-221, N-223 or N-310, or equivalents.
NOTE: Students who have credit for Computer Science N-401 (401) may not take this course for credit.

COMPUTER SCIENCE N-302
Computer Operating Systems

Software organization. Batch processing systems; translation, loading and execution. Communication between programme units. Parallel input-output processing, buffers, overlapped channels, interrupt facilities and memory protection. Spooling. Multiprogramming and multiprocessing systems. Time-sharing and real-time applications. Addressing techniques, paging, core management; file system design and accounting procedures.
Lectures: 3 hours per week, 1 term.
Prerequisite: Computer Science N-301, or equivalent. Computer Science N-223
NOTE: Students who have credit for Computer Science N-402 (402) may not take this course for credit.

COMPUTER SCIENCE N-303
Programming Languages and Compiler Theory

Review of assemblers and macro instructions. Symbol tables and storage allocation. Problem-oriented languages. List processing and string manipulation languages. Structure of algorithmic languages. Compiler organization; statement identification and decomposition, syntax analysis code generation, run-time routines, error diagnostics, code optimization. Compiler writing languages.
Lectures: 3 hours per week, 1 term.
Prerequisites: Computer Science N-221, N-223, N-301; Computer Science N-312 previously or concurrently.
NOTE: Students who have credit for Computer Science N-403 (403) may not take this course for credit.

COMPUTER SCIENCE N-310
Intermediate Scientific Programming

Achievement of proficiency in programming techniques using Fortran. Arrays, iteration, subroutines and procedures, numerical and non-numerical data types, storage allocation, character manipulation. Debugging techniques. Use of library programmes. Basic applications in science, e.g. mathematics, statistics.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisites: Computer Science 011, Mathematics 005, or equivalents.

COMPUTER SCIENCE N-311
Principles of Data Processing

Study of techniques to handle large scale data processing applications. Design of business systems. Preparation and handling of data. Interpretation and validity of results. Information retrieval. Introduction to systems analysis.
Lectures: 3 hours per week, 1 term.
Prerequisite: Computer Science N-222
NOTE: Students who have credit for Computer Science N-411 (411) may not take this course for credit.

COMPUTER SCIENCE N-312
Data and File Structures I

A model of Data Processing System. Basic concepts of data. Trees and linear lists. Hierarchic and associative structures. Storage structures and storage management.
Lectures: 3 hours per week, 1 term.
Prerequisites: Computer Science N-221, N-222 & N-223, or permission of the Department.
NOTE: Students who have credit for Computer Science N-412 (412) may not take this course for credit.

COMPUTER SCIENCE N-320
Numerical Methods

Introduction to numerical algorithms fundamental to scientific computer applications. Errors; interpolation; quadrature; linear systems of equations; roots of polynomials and non-linear equations; numerical solution of ordinary differential equations. Emphasis on the algorithmic approach; efficiency.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisites: Mathematics 006 or N-281 or Engineering Mathematics N-332 or equivalent; Computer Science N-223 or N-310.
NOTE: Students who have credit for Engineering Mathematics N-491 may not take this course for credit.

COMPUTER SCIENCE N-340
Special Purpose Computer Systems

Structure and system organization of special purpose computers. Symbolic coding and assembly language, instruction repertoire, addressing modes, programming techniques, systems and utility programming, peripheral devices and interfacing. A small computer system will be used for demonstration and laboratory purposes.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisite: Computer Science N-301, or permission of the Department.

COMPUTER SCIENCE N-404
Formal Languages and Syntactic Analysis

Definition of formal grammars: arithmetic expressions and precedence grammars; context-free and finite-state grammars. Algorithms for syntactic analysis; recognizers, backtracking and operator precedence techniques. Semantics of grammatical constructs. Simple syntactical compilation. Relationship between formal languages and automata.
Lectures: 3 hours per week, 1 term.
Prerequisites: Computer Science N-303 & N-312

COMPUTER SCIENCE N-405
Computer Graphics

Display memory: generation of points, vectors, etc. Interactive versus passive graphics; CRT devices and plotters. Analog storage of images. Digitizing and digital storage. Pattern recognition. Data structures and graphics software. The mathematics of 3 dimensional transformations; projections. Applications in computer-aided design and instruction.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisites: Computer Science N-302 & N-312

COMPUTER SCIENCE N-413 (413)
Data and File Structures II

Multilinked structures, techniques of file structuring. File size and access time estimating. Data and file management systems. Searching.
Lectures: 3 hours per week, 1 term
Prerequisite: Computer Science N-312 or permission of the Department

COMPUTER SCIENCE N-414
Information Retrieval

The basic problems of information retrieval. Document and library data bases. Question logic and processing considerations. Structure of search programmes for batched questions with sequential and inverted files. Practical considerations in system design. Measures of retrieval effectiveness.
Lectures: 3 hours per week, 1 term.
Prerequisite: Computer Science N-312 or equivalent

COMPUTER SCIENCE N-421 (421)
Introduction to the Theory of Automata

Finite state machines, state transition diagrams and tables. Neural networks. Regular expressions, Kleenes theorem. Computability. Turings theorem. Turing machines. Universal machines relationships to the theory of recursive functions.
Lectures: 3 hours per week, 1 term.
Prerequiste: Computer Science N-301 or N-430 or Electrical Engineering N-512

COMPUTER SCIENCE N-430 (430)
Logical Design and Switching Theory

Binary codes and their arithmetic algorithms. Review of Boolean algebra and its application in the design of logic circuits. Asynchronous and synchronous sequential circuit design and analysis. Microprogramming and its application to system design.
Lectures: 3 hours per week, 1 term.
Laboratory: 1½ hours per week, 1 term.
Prerequisites: Computer Science N-211 & N-220, or permission of the Department

COMPUTER SCIENCE N-431
Digital System Design

Register transfer language and microprogramming. Specification and design of digital systems communications interfaces. Computer interfaces. Data acquisition and control with digital processors.
Lectures: 3 hours per week, 1 term.
Laboratory: 2 hours per week, 1 term.
Prerequisites: Computer Science N-430, or permission of the Department.

COMPUTER SCIENCE N-440 (440)
Heuristic Programming

The definition of heuristic vs. algorithmic methods; rational heuristic approach; non-numeric symbolic programming; self-organizing systems; heuristic pro-techniques including a list of the uses of list processing languages; survey of examples from representative application areas including artificial intelligence, and other advanced computer application areas.
Lectures: 3 hours per week, 1 term.
Prerequisite: Computer Science N-303

COMPUTER SCIENCE N-450 (450)
Discrete System Simulation

A comparison of simulation techniques: discrete, continuous and hybrid. Queueing models, analysis of data. Model building. Review of simulation languages. Application to business problems and operations research.
Lectures: 3 hours per week, 1 term.
Prerequisites: Mathematics N-351, Computer Science N-303

COMPUTER SCIENCE N-491
Computer Science Project

A series of seminars presented by students and faculty members, concerning their particular interest. Students will work on a project in conjunction with a faculty member.
Seminar: 1 hour per week, 2 terms.
Project: 2 hours per week, 2 terms.
Prerequisite: Registration in final year of the Bachelor of Computer Science programme, or permission of the Department.
NOTE: Students who have credit for Computer Science N-490 may not take this course for credit.

71.10 Bachelor of Science Programme

In 1975/76, the Second and Third Years of the programme leading to the Bachelor of Science degree in the Faculty of Engineering are offered at the Loyola campus for students admitted to that programme before January 1975.

71.10.1 Curriculum for the Degree of Bachelor of Science

The First Year of the programme was common to all students. In the upper two years, students must elect to follow one of the Options in Civil, Electrical, or Mechanical Engineering specified below. Variations are permitted in the Options with the permission of the Associate Dean, Faculty of Engineering (Loyola Campus).

71.10.2 PROMOTION

For promotion, an overall average of 60% of the weighted marks is required, and at least 50% in each separate examination or Pass where such grading is permitted. Students who fail to achieve promotion and wish to discuss the possibility of continuing their academic career in the Faculty of Engineering must apply in writing to the Associate Dean, Faculty of Engineering (Loyola Campus) before July 15.

71.10.3 PROGRAMMES

First Year Programme,
All Options (Not offered in 1975/76.)

COURSE	Course Number	Wgtd. Mark	Lec.Hrs. pr/wk		Lab. Hrs. pr/wk	
			1st Term	2nd Term	1st Term	2nd Term
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Material II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
and Electrical Eng.	E-632	100	—	3	—	3
or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

Upper Year Programmes
Civil Engineering

OPTION A — This is a professional curriculum, prepared for students whose goal is either design of structures or the design and control of engineering systems.

Second Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk		Lab. Hrs. pr/wk	
			1st Term	2nd Term	1st Term	2nd Term
Strength of Materials Lab	E-042	50	—	—	3	—
Structural Analysis Z	E-138	100	1	1	2	2
Structural Design I	E-235	100	—	2	—	3
Surveying	E-534	75	2	—	2	—
Hydraulic Engineering	E-535	75	—	3	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
Geology	G-301	100	3	—	2	—
plus						
Either Economics		100	3	3	—	—
or Intro. to Admin.	AD201	50	3	—	—	—
and Perspective on Business	AD202	50	—	3	—	—
Elective		100	3	3	—	—
Totals		775	18	15	9	5

Third Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk		Lab. Hrs. pr/wk	
			1st Term	2nd Term	1st Term	2nd Term
Reinforced Concrete	E-269	100	—	2	—	3
Soils Mechanics & Foundations	E-567	125	2	2	3	—
Transportation Engineering	E-568	75	2	—	2	—
Sanitary Engineering	E-569	75	—	2	—	2
Town Planning	E-571	75	—	2	—	2
Municipal Engineering	E-572	50	2	—	—	—
Elective		100	3	3	—	—
plus						
Either Struct. Design II	E-268	100	—	2	—	3
or Prod. Management	MN345	50	3	—	—	—
plus						
Either Struct. Anal. II	E-172	75	2	—	2	—
and Management & Specification	E-570	50	2	—	—	—
or Human Behavior I	MN313	50	3	—	—	—
and Human Behavior II	MN315	50	—	3	—	—
Totals		800/825	12/19	11/16	5/7	7/10

OPTION B — This is a professional curriculum in Civil Engineering emphasizing engineering fundamentals and providing an introduction to Business Administration. It is recommended to students interested in construction management and aspiring to professional careers in the construction industry.

Second Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Strength of Materials Lab	E-042	50	—	—	3	—
Structural Analysis A	E-139	50	1	—	2	—
Structural Design I	E-235	100	—	2	—	3
Surveying	E-534	75	2	—	2	—
Hydraulic Engineering	E-535	75	—	3	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
Geology	G-301	100	3	—	2	—
Financial I	A-213	50	3	—	—	—
Financial II	A-214	50	—	3	—	—
Intro. to Admin.	AD201	50	3	—	—	—
Perspective on Business	AD202	50	—	3	—	—
Economics		100	3	3	—	—
Totals		825	18	14	9	3

Third Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Reinforced Concrete	E-269	100	—	2	—	3
Soil Mechanics and Foundations	E-567	125	2	2	3	—
Transportation Eng.	E-568	75	2	—	2	—
Town Planning	E-571	75	—	2	—	2
Municipal Engineering	E-572	50	2	—	—	—
Construction Management	E-573	150	3	3	—	—
Human Behavior I	MN313	50	3	—	—	—
Human Behavior II	MN315	50	—	3	—	—
Business Law	MN475	50	3	—	—	—
Business Law	MN476	50	—	3	—	—
Elective		100	3	3	—	—
Totals		875	18	18	5	5

Electrical Engineering

OPTION A — This is a professional curriculum with a strong core of basic Electrical Engineering courses and a wide range of technical electives from the several fields of the discipline. Emphasis is placed on electronics, control systems, and microwaves, either as areas for graduate studies or as bases for a professional career in industry.

Second Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk		Lab. Hrs. pr/wk	
			1st Term	2nd Term	1st Term	2nd Term
Electronic Circuits & Devices	E-635	150	2	2	3*	3*
Network Analysis	E-636	75	3	—	—	—
Electrical Machines	E-637	100	3	—	3	—
Electromagnetic Theory	E-638	75	—	3	—	—
Solid State Physics	E-639	75	—	3	—	—
Switching Circuits	E-640	100	—	3	—	3
Fluid Mechanics I	E-737	75	3	—	—	—
Probability for Engrs.	M-303	75	3	—	—	—
Engineering Maths.	M-315	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
Elective		50	—	3	—	—
Totals		925	17	17	3/6	3/6

*Alternate weeks

Third Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk		Lab. Hrs. pr/wk	
			1st Term	2nd Term	1st Term	2nd Term
Control Simul. Lab	E-171	75	—	—	3	—
Control Systems	E-173	75	3	—	—	—
Technical Project	E-367	100	—	—	3	6
Communication Systems	E-667	75	3	—	—	—
Solid State Devices & Integ. Circ. Sys.	E-676	100	—	3	—	3
Elective		100	3	3	—	—
plus 2 electives from						
Intro. to Digital Comp. Eng.	E-135	150	2	2	2	2
Digital Computer Systems	E-168	75	—	3	—	—
Electromotor Systems	E-672	100	—	3	—	3
E. M. Transmission & Radiation	E-674	100	3	—	3	—
Linear Control Systems	E-174	75	3	—	—	—
Nonlinear Control Systems	E-176	75	—	3	—	—
Control Inst. Circuits & Devices	E-671	100	—	3	—	3
Electrical Machines II	E-673	100	—	3	—	3
Acoustics	E-677	100	—	3	—	3
Business Law	MN475	50	3	—	—	—
Business Law	MN476	50	—	3	—	—
Human Behavior I	MN313	50	3	—	—	—
Human Behavior II	MN315	50	—	3	—	—
Totals		675/775	9/15	6/12	6/11	9/15

OPTION B — This is a professional curriculum of the same general nature outlined in Option A. However, emphasis is placed on digital computer techniques and computer engineering to form, as in Option A, areas for graduate studies or bases for a professional career in industry.

Second Year

COURSE	Course Number	Wgtd Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Intro. Digital Comptr. Eng.	E-135	150	2	2	2	2
Computer Aided Design	E-137	100	—	3	—	2
Network Analysis	E-636	75	3	—	—	—
Electromagnetic Theory	E-638	75	—	3	—	—
Switching Circuits	E-640	100	—	3	—	3
Fluid Mechanics	E-737	75	3	—	—	—
Probability For Engrs.	M-303	75	3	—	—	—
Engineering Mathematics	M-315	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
Elective		50	3	—	—	—
Totals		850	17	14	2	7

Third Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Control & Simulation Lab	E-171	75	—	—	3	—
Control Systems	E-173	75	3	—	—	—
Technical Project	E-367	100	—	—	3	6
Electrical Machines	E-637	100	3	—	3	—
Solid State Devices & Integ. Circ. Sys.	E-676	100	—	3	—	3
Elective	—	100	3	3	—	—
Plus 2 Electives From						
Digital Computer Sys.	E-168	75	—	3	—	—
Nonlinear Control Sys.	E-176	75	—	3	—	—
Computer Aided Design II	E-177	100	3	—	3	—
Cost Engineering	E-368	75	—	3	—	—
Electronic Circuits & Devices	E-675	150	2	2	3*	3*
Theory of Automata	CS-551	75	—	3	—	—
Managerial Operations	QM-313	100	3	3	—	—
Research I						
frames and arches: dynamic loading. Lectures: 2 hours per week, first term.						
Totals		700/800	9/15	6/12	9/15	9/12

*Alternate weeks.

Mechanical Engineering

OPTION A — This is a professional curriculum in Mechanical Engineering emphasizing the design of mechanical components, machines and systems. It is recommended to students interested in design and aspiring to graduate studies and/or professional careers in industry.

Second Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Kinematics of Machines	E-038	75	2	—	3	—
Dynamics of Machines	E-039	75	—	3	—	—
Strength of Materials Lab	E-042	50	—	—	3	—
Systems Analysis	E-134	75	—	3	—	—
Mechanical Design & Stress Analysis	E-234	150	2	2	3	3
*Manufacturing Processes	E-735	50	—	2	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
Experimental Engineering	E-757	50	—	1	—	3
*Heat Transfer	E-771	50	—	2	—	—
Metallurgy for Engrs.	E-834	50	2	—	—	—
Prob. for Engrs.	M-303	75	3	—	—	—
Engineering Maths.	M-315	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
Elective		100	3	3	—	—
Totals		975	18	17	9	6

*Offered in alternate years. Course 735 will be offered in 1975/76.

Third Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs pr/wk 1st Term	Lab. Hrs pr/wk 2nd Term
Mechanical Vibrations	E-067	75	3	—	—	—
Control Systems	E-173	75	3	—	—	—
Advanced Systems Analysis	E-169	75	—	3	—	—
Mechanical Stress Analysis	E-175	75	—	3	—	—
Mechanical Design	E-267	75	2	—	3	—
*Manufacturing Processes	E-735	50	—	2	—	—
Mechanical Engineering Lab	E-768	50	—	—	—	3
Thermodynamics II	E-769	75	3	—	—	—
Fluid Mechanics II	E-770	75	—	3	—	—
*Heat Transfer	E-771	50	—	2	—	—
Applied Thermodynamics	E-772	75	—	3	—	—
Fluid Machinery	E-773	75	3	—	—	—
Elective	—	100	3	3	3	—
Totals		575	17	17	3	3

*Offered in alternate years. Course 735 will be offered in 1975/76.

OPTION B — This is a professional curriculum in Mechanical Engineering emphasizing engineering fundamentals and providing an introduction to Business Administration. It is recommended to students interested in production and industrial engineering and aspiring to professional careers in industry.

Second Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Kinematics of Machines	E-038	75	2	—	3	—
Dynamics of Machines	E-039	75	—	3	—	—
Strength of Materials Lab	E-042	50	—	—	3	—
Mechanical Design & Stress Analysis	E-234	150	2	2	3	3
*Manufacturing Process	E-735	50	—	2	—	—
Fluid Mechanics I	E-797	75	3	—	—	—
Experimental Engineering	E-757	50	—	1	—	3
*Heat Transfer	E-771	50	—	2	—	—
Metallurgy for Engrs.	E-834	50	2	—	—	—
Probability for Engrs.	M-303	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
Intro. to Admin.	AD201	50	3	—	—	—
Perspectives on Business	AD202	50	—	3	—	—
Elective		100	3	3	—	—
Totals		925	18	19	9	6

*Offered in alternate years. Course 735 will be offered in 1975/76.

Third Year

COURSE	Course Number	Wgtd. Mark	Lec. Hrs. pr/wk 1st Term	Lec. Hrs. pr/wk 2nd Term	Lab. Hrs. pr/wk 1st Term	Lab. Hrs. pr/wk 2nd Term
Mechanical Vibrations	E-067	75	3	—	—	—
Control Systems	E-173	75	3	—	—	—
Mechanical Stress Anal.	E-175	75	—	3	—	—
Mechanical Design	E-267	75	2	—	3	—
*Manufacturing Processes	E-735	50	—	2	—	—
Fluid Mechanics II	E-770	75	—	3	—	—
*Heat Transfer	E-771	50	—	2	—	—
Applied Thermodynamics	E-772	75	—	3	—	—
Human Behavior I	MN313	50	3	—	—	—
Human Behavior II	MN315	50	—	3	—	—
Business Law	MN475	50	3	—	—	—
Business Law	MN476	50	—	3	—	—
Elective		100	3	3	—	—
Totals		800	17	20	3	—

*Offered in alternate years. Course 735 will be offered in 1975/76.

71.10.4 COURSE DESCRIPTIONS

APPLIED MECHANICS

E-011
Mechanics of Materials I
Statics of particles and systems; vectors; simple frames; centroids; friction; moment of inertia of area and mass; bending moment; shearing force; axial force.
Lectures: 2 hours per week, first term.
Tutorial: 1 hour per week, first term.
NOTE: This course is no longer offered

E-031
Mechanics of Materials II
Elastic and plastic properties of materials, axial, thermal, bending; shear and torsional stresses. Deflection of beams by differential equation of elastic line and moment area. Indeterminate members. Non-homogeneous sections.
Lectures: 3 hours per week, second term.
NOTE: This course is no longer offered.

E-037
Dynamics
Fundamental concepts; theory and application of Newton's Laws of motion and gravitation, conservation of impulse and momentum, conservation of energy; d'Alembert's Principles; friction (brakes, clutches, belt drives); gyroscopic motion; simple harmonic motion.
Lectures: 3 hours per week, first term.
NOTE: This course is no longer offered.

E-038
Kinematics of Machines
Kinematics, analytical and graphical methods of velocity and acceleration analysis of mechanisms, including linkages, cams, gears, and gear trains.
Lectures: 2 hours per week, first term.
Labs: 3 hours per week, first term.

E-039
Dynamics of Machines
Force analysis of mechanisms. Static and dynamic balancing of reciprocating and rotating mechanisms. Flywheel analysis.
Lectures: 3 hours per week, second term.

E-042
Mechanics of Materials Laboratory — C. Goldman
Destructive and non-destructive testing: stress analysis using electrical strain gauges and photo stress techniques; properties of brittle and elastic materials.
Lab: 3 hours per week, second term.

E-067
Mechanical Vibrations — K. Krakow
Vibrations, free, forced, damped; systems having single and multiple degrees of freedom; torsional vibration, critical speed of shafts, vibrations of beams.
Lectures: 3 hours per week, first term.
Text: Tse, S.F., Morse, I.E. & Hinkle, R.T., Mechanical Vibrations, Allyn and Bacon.

ENGINEERING ANALYSIS

E-131
Numerical Analysis and Computation Methods
Basic methods of numerical analysis useful in the solution of engineering problems. Zeroes of functions, polynomials, linear interpolation, least square approximation, systems of linear equations, numerical integration, ordinary differential equations, error analysis. Problems solved using a digital computer. Prerequisite: Fortran Programming or equivalent.
Lecture: 3 hours per week, first or second term.
NOTE: This course is no longer offered.

E-134
Systems Analysis — K. Krakow
Particle mechanics. Field theory, gravitational, fluid flow, and electrical conduction fields. Analogies between mechanical and electrical systems, mechanical vibrations, heat flow, pipe flow, R-L-C circuits. Unit functions and their application.
Lecture: 3 hours per week, second term.

E-135
Introduction to Digital Computer Engineering — E. Cerny
Fundamental concepts, number systems, codes, arithmetic operations, Boolean algebra, principles of logical design of combinational and sequential circuits. Stored program computer arithmetic and control units, memories, I/O, communication within a computer. Examples taken from modern general purpose computers, laboratory period devoted to organization, programming, and real time application of a PDP-11 computer.
Lecture: 2 hours per week, both terms.
Labs: 2 hours per week, both terms.

E-137
Computer Aided Design I — E. Ahad
Selected topics in advanced numerical methods for solution of engineering problems, iterative solutions of algebraic and transcendental equations, solutions of systems of linear algebraic equations, matrix manipulation, polynomical curve fitting, solution of ordinary and partial differential equations and of systems of differential equations. Stability and accuracy of solutions. The methods are illustrated by application to typical engineering problems and to recent techniques in computer aided design.
Lectures: 3 hours per week, second term.
Labs: 2 hours per week, second term.

E-138
Structural Analysis Z — C. Goldman
Analysis of statically indeterminate structures, moment distribution, slope deflection, virtual work, and strain energy, deflection analysis; influence lines; collapse methods.
Lectures: 1 hour per week, both terms.
Labs: 2 hours per week, both terms.

E-139
Structural Analysis A
The first term of course 138.
Lectures: 1 hour per week, first term.
Lab.: 2 hours per week, first term.

E-168
Digital Computer Systems — M. Marin
Advanced concepts in computer organization for increased speed of operation. Large multi-user computers. Systems for real time application data acquisition, display and control. Interplay of hardware and software in digital system design.
Lectures: 3 hours per week, second term.

E-169
Advanced System Analysis — K. Krakow, J. Krantzberg
Application of matrix methods to problems in vibrations; application numerical methods to problems in fluid mechanics, digital and analog computer applications.
Lectures: 3 hours per week, second term.

E-171
Control and Simulation Laboratory — V. Stefanovic
Measurements on control systems; modelling of control and physical systems; fundamentals of analog computation; analog computer simulation of engineering systems.
Labs: 3 hours per week, first term.

E-172
Structural Analysis II — J. Krantzberg
Computer methods in structural analysis; rigid frames and arches; dynamic loading.
Lectures: 2 hours per week, first term.
Labs: 2 hours per week, first term.

E-173
Control Systems — C. Vandersluis
Open and closed loop control. Sensitivity, La-

place transform. Stability by root-locus Bode, Nyquist, Routh-Hurwitz methods. Systems compensation and design by frequency and complex plane techniques.
Lectures: 3 hours per week, first term.

E-174
Linear Control Systems — V. Stefanovic
State space description of linear systems. Controllability and observability. Eigenvalues and stability. Liapunov Stability. Quadratic performance criteria and optimal control. Maximum principle and dynamic programming.
Lectures: 3 hours per week, first term.

E-175
Mechanical Stress Analysis — R. Neemeh
Advanced stress analysis, statically indeterminate beams, torsion, combined torsion and bending, plates, shells and cylinders. Rotating disk, energy methods.
Lectures: 3 hours per week, second term.
Reference: Timoshenko, S., *"Elementary Theory & Problems"*, Part II, 3rd Ed., Van Nostrand.

E-176
Nonlinear Control Systems — V. Stefanovic
Describing functions, phase plane techniques. Systems with backlash dead-band, and saturation. Relay controllers. Mathieu equation. Stability: limited cycles, sustained oscillations. Liapunov's Stability.
Lectures: 3 hours per week, second term.

E-177
Computer Aided Design II — E. Ahad
Application of simulation languages to typical engineering problems and to engineering management. Project control techniques such as CPM, PERT and PERT/COST are discussed. The important portions of the course involve the analysis and solution of a representative class of problems by the student using the digital computer.
Lectures: 3 hours per week, first term.
Labs: 2 hours per week, first term.

ENGINEERING DESIGN

E-234
Mechanical Design and Stress Analysis — R. Neemeh, H. Wardell, S.J.
Stress analysis, combined stresses, Mohr's circle, beams columns, curved beams, stress concentration, fatigue, impact, bolted, riveted and welded connections. Machine design, screws, fasteners, cams, shafts. The first term laboratory work concentrates on Mechanical Drawing; the second term concentrates on design projects.
Lectures: 2 hours per week, both terms.
Labs: 3 hours per week, both terms.
References: Timoshenko, S., *"Strength of Materials"*, Part 1, 3rd Ed. French, T.E., & Vierck, C.J., *"Engineering Drawing"*, 9th Ed., McGraw-Hill, Faires, V., *"Design of Machine Elements"*, 4th Ed., McMillan.

E-235
Structural Design I — C. Goldman
Design of tension, compression and flexural members in steel and timber specifications and codes; riveted, bolted, and welded details; building frames.
Lectures: 2 hours per week, second term.
Labs: 3 hours per week, second term.

E-267
Mechanical Design. — R. Neemeh
Design of gears, gear trains, couplings, clutches, brakes, springs. Theory of lubrication and bearings. Design projects. Lectures: 2 hours per week, first term.
Labs: 3 hours per week, first term.
Text: Faires, V., *"Design of Machine Elements"*, 4th Ed., MacMillan.

E-268
Structural Design II — C. Goldman
Design projects; railway and highway bridges; rigid frames.
Lectures: 2 hours per week, second term.
Lab: 3 hours per week, second term.

E-269
Reinforced Concrete — C. Goldman
Analysis and design of beams, slabs, and columns; building frames; elastic and ultimate strength design.
Lectures: 2 hours per week, second term.
Lab: 3 hours per week, second term.

PROFESSIONAL PRACTICE

E-311
Professional Practice
Management "styles" of company presidents. Each week a different executive officer meets the class and describes briefly his mode of operation for successful management. An informal exchange of opinions between students and invited guest follows.
Lectures: one 2 hour period per week, second term.
NOTE: This course is no longer offered.

E-312
History of Engineering
This course aims at providing a perspective of the ways in which the immensely complex technical knowledge of our civilization has come into being. It deals with the human values in our technological civilization as well as the methods and skills by which man has attained a gradual easing of his earthly lot through mastery of his natural environment.
Lectures: 3 hours per week second term.
NOTE: This course is no longer offered.

E-367
Technical Project — Staff
A laboratory programme designed to combine analytical, computational and laboratory techniques in the synthesis of typical engineering devices or sub-systems. Independent design project, selected under staff guidance in first-term, terminating in a major technical report.
Labs: 3 hours per week, first term.
Labs: 6 hours per week, second term.

E-368
Cost Engineering — M. Kilbertus
Elements of cost estimation. Techniques of quantity take-offs and pricing, indirect costs, engineering costs. Techniques of cost control and its importance in projects. Timely forecasting of cost under-runs and over-runs. Analysis of profitability of projects. Economic evaluation techniques & investment return. Examination of typical projects where cost engineering techniques are being applied.
Lectures: 3 hours per week, second term.

CIVIL ENGINEERING

E-534
Surveying
Types of survey; description and use of level, compass, transit, chain and tape: levelling; traverses, stadia. Route surveys involving simple, spiral and vertical curves. Grades, cross-sections, area and earth-work, calculations. Use of planimeter; Triangulation; Hydrographic surveying.
Lectures: 2 hours per week, first term.
Lab: 2 hours per week, first term.

E-535
Hydraulic Engineering
Open channel flow, and measurements; pumps; dams; reservoirs, flood control. Drainage and irrigation; harbours, docks; coast protection.
Lectures: 3 hours per week, second term.

E-567
Soil Mechanics and Foundations
Soil properties and structure; sub-surface exploration methods; bearing capacity of soils, soil strength; settlement and consolidation; slope stability; groundwater and seepage; lateral earth pressure theories, design of retaining walls and footings; foundation types.
Lectures: 3 hours per week, both terms.
Lab: 3 hours per week, first term.

E-568
Transportation Engineering
Introduction to highway, airport and railway engineering; traffic studies; transportation planning and economics; Geometric design of highways; earthwork and drainage.
Lectures: 2 hours per week, first term.
Lab: 2 hours per week, first term.

E-569
Sanitary Engineering
Biological and chemical principles of water and air pollution; industrial waste disposal.
Lectures: 2 hours per week, second term.
Lab: 2 hours per week, second term.

E-570
Management and Specifications
Contracts, Agreements and Specification writing; industrial relations; engineers' responsibility and professional ethics.
Lectures: 2 hours per week, first term.

E-571
Town Planning
Elements of town planning; environmental studies; traffic engineering; geometric design of streets; materials of pavement construction.
Lectures: 2 hours per week, second term.
Lab: 2 hours per week, second term.

E-572
Municipal Engineering
Water supply; water distribution systems; water purification; sewage treatment and disposals; storm drainage.
Lecture: 2 hours per week, first term.

E-573
Construction Management
Elements of cost estimation. Techniques of quantity take-offs and pricing, indirect costs, engineering costs. Techniques of cost control and its importance in projects. Timely forecasting of cost under-runs and over-runs. Analysis of profitability of projects, critical path analysis. Economic evaluation techniques and investment return. Examination of typical projects where cost engineering techniques are being applied.
Lectures: 3 hours per week, both terms.

ELECTRICAL ENGINEERING

E-621
Circuit Analysis and Energy Conversion.
The fundamentals of the analysis of linear circuits to study time varying, periodic and non-periodic currents, and voltages; node and loop analysis; network theorems; time frequency domain relationships; polyphase circuits Fourier series, Laplace transforms; coupling elements and coupled circuits; ideal transformers; controlled sources. Semiconductor electronics. Simple amplifier circuits, frequency response. Simple rectifier and modulator circuits.
Lectures: 3 hours per week, both terms.
Labs: 3 hours per week, both terms.
NOTE: This course is no longer offered.

E-631
Circuit Analysis
Analysis of the steady state and transient responses of linear circuits to steady and time varying current and voltages; node and loop analysis; network theorems; Laplace transforms; polyphase circuits.
Lectures: 3 hours per week, first term.
Lab: 3 hours per week, first term.
NOTE: This course is no longer offered.

E-632
Electrical Engineering
Balanced three phase power systems. Magnetic Theory; Ampere's Law, Magnetic Flux, Hysteresis. Characteristics of Transformers, Induction, Synchronous and DC Machines Semiconductor Electronics, Graphical and Equivalent Circuit Analysis of simple Transistor Amplifiers, Logic Circuits, Modulation, Rectifier Circuits.
Lectures: 3 hours per week, second term.
Lab: 3 hours per week, second term.
NOTE: This course is no longer offered.

E-635
Electronic Circuits and Devices — E. Ahad
Device equivalent circuit representations; bias-stabilized transistor amplifiers, frequency response, feedback in amplifiers, oscillaters, tuned circuits, wide-band amplifiers pulse circuits. Modulation and detection circuits. Design using integrated circuits.
Lectures: 2 hours per week, both terms.
Labs: 3 hours per week, alternate weeks, both terms.

E-636
Network Analysis — S. Rauch
Coupling elements and coupled circuits; polyphase circuits. Introduction to network topology; Fourier series and Fourier-Laplace integral representation for signals; convolution integral; time-frequency domain relationships; network functions; parameters of two-part networks; filter theory; systems with distributed parameters.
Lectures: 3 hours per week, first term.

E-637
Electrical Machines I — V. Stefanovic
Magnetically coupled coils. Iron core transformer. Single and multiple excited machines. Electromechanical transducers. Application of generalized machine theory to the steady-state and transient analysis of DC, synchronous and induction machines.
Lectures: 3 hours per week, first term.
Labs: 3 hours per week, first term.

E-638
Electromagnetic Theory — S. Kubina
Electrostatic fields, Coulomb's Law, Gauss' Law, Poisson and Laplace equations. Boundary value problems. Magnetostatic field, Ampere's and Biot-Savart laws. Maxwell's equations. Uniform plane wave, reflection and refraction, the transmission line.
Lectures: 3 hours per week, second term.

E-639
Solid State Physics — C. Adkar
Elementary crystal structure. Waves in periodic media. Lattice vibrations. Free electron models. Thermionic emission. Energy bands. Semiconductors conduction by holes and electrons, doping; junctions, Magnetic and dielectric properties of solids.
Lectures: 3 hours per week, second term.

E-640
Switching Circuits — E. Cerny
Principles of digital measurements, switching devices, diode, transistor logic gates; digital integrated circuits, Boolean algebra. Analysis and synthesis of combinational and sequential logic circuits. Applications.
Lectures: 3 hours per week, second term.
Labs: 3 hours per week, second term.

E-667
Communication Systems — S. Rauch
Mathematical representation for signals. Laplace transforms, series expressions. Fourier transforms, amplitude and phase spectra, convolution and correlation methods, signal sampling Amplitude, frequency, and phase modulation, demodulation, suppressed band systems, multiplexing, noise spectra, signal detection in the presence of noise.
Lectures: 3 hours per week, first term.

E-671
Control and Instrumentation Circuits and Devices — V. Stefanovic
Analysis and design principles of electrical systems for measurement, instrumentation and control. Review of basic devices and circuits used in instrumentation, including transducers. Study of operational amplifiers, regulators, modulators and demodulators, servomotors, selsyns, analog and digital gates.

Lectures: 3 hours per week, second term.
Lab: 3 hours per week, second term.

E-672
Electromotor Systems — V. Stefanovic
Practical approach to the design of electromotor drives: selecting the motor for a given load cycle; dynamics of E-M drives. Methods of speed regulations in AC and DC motors, power regulating devices (such as SCRs) and their compatibility with various E-M. drives.
Lectures: 3 hours per week, second term.
Labs: 3 hours per week, second term.

E-673
Electrical Machines II — V. Stefanovic
Nonlinearities in El. Machines. More detailed study of transients. Synchronous machine under various loads. Dynamic performance of electrical machines including rotating amplifiers in feed back system.
Lectures: 3 hours per week, second term.
Lab: 3 hours per week, second term.

E-674
Electromagnetic Transmission and Radiation — S. Kubina
Wave propagation in continuous media and their dispersion relations; energy and energy flow associated with wave propagation in passive and active media: coupling of modes and general stability criteria; waveguides; cavities; transmission lines, standing wave; antennas; radiation, coupled transmission systems.
Lectures: 3 hours per week, first term.
Labs: 3 hours per week, first term.

E-676
Solid State Devices and Integrated Circuit Systems — B. Podesto
Devices of current interest; field-effect transistors, tunnel diodes; SCR, integrated circuits. Physical phenomena for special solid-state devices, thermoelectric effects, lasers, superconductivity, device fabrication techniques, integrated circuit applications.
Lectures: 3 hours per week, second term.
Labs: 3 hours per week, second term.

E-677
Acoustics — S. Kubina
Sound generation and propagation in elastic media; conversion between acoustical, electrical, and mechanical energy. Lumped-parameter approximations, sound in rooms, underwater acoustics, microphones; loudspeakers and audio communications problems; noise and vibration control problems.
Lectures: 3 hours per week, second term.
Labs: 3 hours per week, second term.

MECHANICAL ENGINEERING

E-735
Manufacturing Processes — P. Kundstadt
Review of metals used in industry; their properties and fabricating characteristics; plastics; castings; forgings; welding; cold forming; cutting tools; machine tools; automation and numerical control; inspection and quality control; planning and machine loading.
Machine shop practice: planning and machine loading, machining of components; hardfacing and welding; grinding and lapping; inspection, assembly and testing; tool layout, setup of fully automatic transfer machine; setup of N.C. machine tool.
Lectures: 2 hours per week, second term.

E-736
Thermodynamics I
Thermodynamic concepts, properties, processes, laws and cycles; first law of thermodynamics and its application to non-flow, quasistatic, and flow processes; ideal vapour and air standard cycles, reciprocating compressors, non-reacting and reacting mixtures, psychometrics, adiabatic flame temperature.
Lectures: 3 hours per week, second term.
NOTE: This course is no longer offered.

E-737
Fluid Mechanics I — R. Neemeh
Properties of fluids, hydrostatics, incompressible flow, continuity, conservation of momentum, conservation of energy, concept of laminar and turbulent flow; flow in pipes; open channel flow.
Lectures: 3 hours per week, first term.
Text: Streeter, V.L. *"Fluid Mechanics"*, 4th Ed., McGraw-Hill.

E-757
Experimental Engineering — R. Neemeh
Theory and use of instruments; measurements of temperature; pressure, fluid flow, power; displacement, acceleration; use of stroboscope, error analysis.
Lectures: 1 hour per week, second term.
Labs: 3 hours per week, second term.
Reference: Holman, J.P., *"Experimental Methods for Engineers"*, McGraw-Hill.

E-768
Mechanical Engineering Laboratory — R. Neemeh
Experiments relating to thermodynamics, fluid mechanics and heat transfer. Testing of mechanical equipment, fans, reciprocating compressor, boiler, steam turbine, open channel flow, heat exchanger, etc.
Labs: 3 hours per week, second term.

E-769
Thermodynamics II — R. Neemeh
Second law of thermodynamics. Clausius inequality, Maxwell equations, Clapeyron equation, Rankine, reheat and regenerative cycles, Joule-Brayton cycle, vapour compression refrigeration cycle, gas turbines, internal combustion engines, differences between real and ideal cycles, combustion with dissociation.
Lectures: 3 hours per week, first term.

E-770
Fluid Mechanics II — K. Krakow
Subsonic and supersonic compressible flow, potential flow theory, boundary layer theory, flow through turbomachinery, air foil theory.
Lectures: 3 hours per week, second term.
Text: Streeter, V.L., *"Fluid Mechanics"*, 4th Ed. McGraw-Hill. Reference: Schlichting, H., *"Boundary Layer Theory"*, 6th Ed., McGraw-Hill.

E-771
Heat Transfer — R. Neemeh
Steady state and transient conduction; radiation; free and forced convection; boiling and condensation; heat exchangers; systems with heat sources, extended surfaces.
Lectures: 2 hours per week, second term.
Text: Kreith, F., *"Principles of Heat Transfer"* 2nd edition, International Textbook Co.

E-772
Applied Thermodynamics — K. Krakow
Thermodynamics, fluid mechanics and heat transfer concepts are applied to the analysis and design of propulsion systems, environmental control systems and power plants. Optimum design of systems, selection and matching of components.
Lectures: 3 hours per week, second term.
References: Wood, B.D., *"Application of Thermodynamics"*, Addison Wesley.

E-773
Fluid Machinery — K. Krakow
Dimensional analysis and similitude. Operating characteristics of pumps, fans, compressors, hydraulic and gas turbines. Matching of components and analysis of systems.
Lectures: 3 hours per week, first term.

MATERIALS SCIENCE

E-801
Materials Science
A systematic approach to the study of properties and behaviour of engineering materials, including the fundamental properties of materials,

metallic phases, multiphase intervals, structural effects on properties, stability under service stresses; thermal, electrical, chemical properties and corrosion; organic and non-metallic materials.
Lectures: 2 hours per week, both terms.
NOTE: This course is no longer offered

E-834
Metallurgy for Engineers — J. E. Orr
A systematic approach to metallurgy including the recrystallization recovery, grain growth, phase diagrams, eutectic systems, intermediate phases and precipitation hardening, non-ferrous metals. The course will cover in detail iron-carbon alloys, cast irons, T-T-T diagrams, properties of quenched and tempered steels and methods of surface hardening.
Lectures: 2 hours per week, first term.

71.11 Certificate Programme in Quality Control

The programme leading to the Certificate in Quality Control is offered at the Loyola campus, in the Evening Division only.

71.11.1 ADMISSION REQUIREMENTS

Applications for admission to the certificate programme in Quality Control are submitted to the Evening Division Office at the Loyola campus.

General Admission requirements are listed § 13.

Specific requirements are a Diploma of Collegial Studies, or its equivalent, with the completion of the equivalent of Mathematics 109 and 111 as offered in the Loyola Faculty of Arts and Science.

71.11.2 CURRICULUM FOR THE CERTIFICATE IN QUALITY CONTROL

The university offers a programme leading to the Certificate in Quality Control. To be recommended for the award of the Certificate, students must satisfactorily complete the programme of 48 credits specified below. Of the total credits required, 30 pertain directly to quality control, while the remainder are from computer science, mathematics and other allied areas. The courses offered in the programme will provide the student with an in-depth understanding and working knowledge of the principles and practices used in the rapidly expanding field of quality control.

The programme is fully endorsed by the Montreal Section of the American Society for Quality Control (ASQC). It has been designed in keeping with the requirements stipulated by the Education Institute of the ASQC headquarters and, as such, does much to prepare candidates for the ASQC Quality Engineer Certification examinations.

71.11.3 ACADEMIC REGULATIONS

Students are subject to the aca lemic regulations of the Evening Division at the Loyola campus.

71.11.4 COURSE REQUIREMENTS

To be recommended for the award of the Certificate, students must satisfactorily complete the following courses:

E-900 Elementary Metrology
E-901 Advanced Metrology
E-902 Statistical Quality Control
E-903 Acceptance Sampling
E-904 Basic Concepts of Reliability
E-905 Reliability Engineering
E-906 Quality Management
E-907 Design of Experiments
Man 345 Production Management
Comp Sc 221 Introduction to Business Computing
Comp Sc 241 Elementary Fortran Programming
Comp Sc 424 Statistical Computer Applications.

Courses descriptions for courses offered in the Faculty of Engineering, designated E above, are given below. The description of Management 345 is given in the Faculty of Commerce and Administration § 61, while the Computer Science courses listed above are described under the Loyola Faculty of Arts and Science. § 51.

71.11.5 COURSE DESCRIPTIONS

E-900
Elementary Metrology.

This course is intended as an introductory course for all engineering personnel involved in the field of inspection, quality engineering and product manufacturing. This course deals with General measurement concepts, Methods for Estimating Accuracy and Precision, Precision vs Accuracy, Systematic and constant errors. It covers the Mathematical Concepts in Metrology, Statistical Analysis of Measurement Data and Control Charts Technique. The Role of Standards, Legal bases, Systems of Measurements, Master Standards, the principles involved in the use of Projectors, Pneumatic Comparators and Direct reading Measuring Machines are covered in detail. The object of this course is to provide the participant an adequate knowledge for true understanding of Metrology, its nature and principles, and the mathematical concepts that govern it. (3 credits)
Prerequisite: Mathematics 109/111, or equivalent

E-901
Advanced Metrology.
(Formerly Business 331) R. Mustard
This course develops the principles presented in Metrology I and explores the value of these principles through every day applications to the unique uses of modern technology. The course considers flat references, including surface plate calibration, screw thread gauging and measurement, angular and circular division, with special emphasis in automated and semi-automated gauging techniques using pneumatic and electrical sensing or amplifying devices.

Special consideration is given to full appreciation of the Systeme Internationale (Modernized Metric System) and its influence in the immediate future of industry, this covering use of conversion tables and formulae for all related physical standards and measurements. In addition, visual data collection methods and systems will be presented including recording devices, etc . . .

Further development of non-destructive testing techniques will be pursued including, in some depth, appreciation of radiographic, ultrasonic and nucleonic gauging and measurement applications.

Special considerations will be given to measurement problem areas including large part precision, miniaturization, standardization and the techniques in qualifying subjective or arbitary standards. (3 credits)
Prerequisite: Engineering 900

E-902
Statistical Quality Control
(Formerly Business 351). A. Schmidt

This course is intended for all engineering personnel who are involved in one way or another with actual manufacturing processes. S.Q.C. is a tool which every engineer and technician should have at his fingertips. It is a tool which helps "make it right the first time" rather than to depend on inspection to "catch" defective product. The emphasis is on eliminating defect causes-found using statistical techniques.

This course will present both the theory and practice most effective for maintaining process control of manufactured product. It is designed as a workshop course with full participation of students in solving a variety of practical type quality control problems.

The course discusses such things as the concept of variation, frequency distributions, functions of a distribution, the control chart concept, various types of control charts including those for attributes and variables data, analysis of patterns, process capability studies and other related topics. (3 credits)

E-903
Acceptance Sampling
(Formerly Business 420) G. Rosenzweig

This course is intended for personnel involved in manufacturing, inspection, reliability engineering, quality control, quality assurance, and management. The objective is to present by means of lecture workshop sessions a thorough understanding of the principles involved in acceptance sampling of manufactured product, the dollar savings as compared to 100% final inspection and the risks involved in sampling, both for producer and consumer. The objective of the course is to provide the student with a working knowledge of various aspects of sampling inspection applicable to his own field of endeavor.

The course discusses probability theory, the binomial, Poisson and hypergeometic distributions; their development, and application to sampling theory; three classifications of sampling plans, namely AQL, AOQL, and LTPD. Also discussed are the various types of sampling plans within each classification such as single, double, multiple, unit sequential, and continuous plans and their associated operating characteristic curves. The Dodge and Roming and Mil-Std-105D tables are discussed in detail while variables sampling, Mil-Std-414 and Mil-Std-883 are also highlighted. (6 credits)
Prerequisite: Engineering 902

E-904
Basic Concepts of Reliability
(Formerly Business 449) F. Moller

The purpose of this course is to familiarize the student with the basic principles of reliability and will be of direct benefit to those seeking either to advance their knowledge in, or to enter the field of quality control and reliability. The approach taken is practical and designed to enable managers, engineers and other technical personnel to obtain a thorough understanding of the fundamentals of reliability theory and practice. Building up gradually from historical review, definitions and concepts the course discusses probability theory, Poisson and exponential distributions, reliability equation, MTBF and failure rate concepts, Weibull analysis, mean and median ranks, confidence statements, Life characteristic curves, system reliabilities, standby systems, associated problems and other related topics. The mix of lectures, workshops, problems and discussions is designed to enhance the learning experience. (3 credits)
Prerequisite: Engineering 902

E-905
Reliability Engineering
(Formerly Business 451) F. Moller

Statistical methods in life testing. Introduction, reliability, concepts and definitions, historical review and development. Life characteristic curve, Poisson and exponential distributions, exponential reliability equation, MTBF and failure rate concepts.

Chi square confidence statements and intervals, Weibull analysis, mean and median ranks, associated problems. Probability theory, system reliabilities, standby systems, other related topics. (3 credits)
Prerequisite: Engineering 904

E-906
Quality Management
(Formerly Business 461) K. Kivenko

This course is designed for those involved in the planning and managing of quality control activities in industry. Emphasis will be on general principles rather than quality control methodology. The concept of total quality control will be developed as it applies from design, development, manufacturing and purchasing to customer usage of the product.

The economics of quality, the planning and implementation of a quality cost programme, organization for quality, procurement quality control, in-process control, motivation for quality, inspection and test planning as well as the planning of product and system quality audit and customer feedback are topics to be treated in more detail. (3 credits)

E-907
Design of Experiments
(Formerly Business 410)

This course is intended as an introductory course for all engineering personnel involved in product manufacture and development concerned with planning and interpreting the results of industrial experiments.

The objective is to provide the participant with a more scientific approach to experimentation with emphasis on the use of statistical designs for data interpretation and high confidence in the results. Proper planning of experiments coupled with statistical evaluation of data effectively reduces experimenting time, scrap and rework, resolves conflicting results and opinions, reduces interruptions to shop by eliminating trial and error runs and, most important, reduces overall costs.

Some topics covered are: Tests of hypothesis, F, t, X^2, Analysis of Variance, Latin Square, Cube and Nested designs. Full Factorial, and Fractional Factoral Designs. Goodness of fit tests, tests for proportions, for precision and accuracy, normal probability paper, control chart analysis of experiments, regression analysis and other relevant statistical tools and designs such as Random Balance, Multiple Balance. (6 credits)
Prerequisite: Engineering 902
Text: A. Chamitoft, "Introduction to Statistical Design of Experiments".

81 Faculty of Fine Arts

81.1 Faculty of Fine Arts

Dean and Administrative Staff to be appointed.

The Department of Fine Arts at Sir George Williams University has offered a BFA degree programme since 1966. At the Concordia Senate meeting in June, 1974 the Fine Arts Departments of Loyola and Sir George Williams were united to form a new Concordia University Faculty of Fine Arts.

The search committee formed to select a Dean is expected to reach a decision early in January 1975 and a new faculty structure will then be set up.

During this transition period it is possible that there may be changes made and if so these changes will be published. Some of the programmes will be offered on one campus only.

This transfer of status is not expected to affect the students on either campus. The Loyola students in the BA Major in Art may finish their present programme. However, students within this BA programme may transfer to the BFA with the condition that they meet the requirements for that degree. New students will apply to the new faculty. At Sir George Williams the present programmes will continue.

81.2 Admission Requirements

General admission requirements are listed in §13. Specific requirements for admission to the various major programmes in Fine Arts are as follows:

Art History and Studio Art Art Education Graphic Design Visual Arts	Two full studio courses, one full Art History course and one additional full course selected from Art History, Cinema, Music or Theatre Arts.

A student without the necessary studio courses must take Art N-200 as a prerequisite to other studio courses in the Visual Arts

NOTE: Quebec universities have agreed to admit to the appropriate undergraduate programme any collegial student successfully completing the above programme provided of course that resources are sufficient. When all such qualified students have been admitted, the university reserves the right to admit students who may not have all the specific prerequisites according to its own criteria.

81.3 Degree Requirements

81.3.1 DEFINITION OF CREDIT

Up to and including the academic year 1973-74, degree programmes have been expressed in terms of courses, with one credit being applied to a "full course" (normally two terms) and one half-credit being applied to a "half-course" (normally one term).

Starting in 1974-75, in accordance with the recommendations of the Quebec Council of Universities, the credit-base is being modified to take into account the total activity of the student. Students preparing for the degree of Bachelor of Fine Arts will take a minimum of 90 credits. Each credit represents, for the average student, a minimum of 45 hours of work spread across lectures, conferences, laboratories, studio or practice-periods, tests, examinations and personal work.

The number of students accepted into the BFA programme will depend upon the space available. Applicants will be considered on the basis of a portfolio of work (three-dimensional work should be photographed), recommendations by the instructors and any other relevant information. Students intending to apply for transfer to the Bachelor of Fine Arts at the end of first year should fill out the necessary forms available from the Admissions Office.

Transfer students

Students who have already completed courses in other colleges or universities and wish to apply for advanced standing will be granted credits on the basis of the programme at Concordia University. A transcript, portfolio and/or slides of work should be submitted to the Faculty of Fine Arts at the time of application prior to March 1st and by appointment with the Faculty. Students seeking a second degree must complete a minimum of the last two academic years at Concordia University, while students transferring credits towards a first degree must complete a minimum of one full academic year.

81.3.2 BFA DEGREE REQUIREMENTS

Graduation with the degree of Bachelor of Fine Arts requires:

1. Successful completion of a Major programme of 60 credits, or Double Minor (2 x 30 credits).

2. A maximum of 48 '200' level credits out of the 90 credits required for the degree.

3. Students must take at least 24 of their 90 credits outside of the Fine Arts. These 24 credits shall be selected according to the following requirements:

a. 12 credits shall be outside of the Faculty of Fine Arts but may be in the Humanities (see the Sir George Williams Faculty of Arts, § 41, and Loyola Faculty of Arts and Science § 51).

b. 12 credits from:

i) Social Sciences
(See: Sir George Williams Faculty of Arts § 41 and Loyola Faculty of Arts and Science § 51)

ii) Faculty of Commerce § 61, Faculty of Engineering § 71, Sir George Williams Faculty of Science § 91, Loyola Faculty of Arts and Science § 51.

Concentration Requirement

The Concentration Requirement can be satisfied either by a Major programme (60 credits) or by a Double Minor (2 x 30 credits). The selection is to be made upon entry, prior to registration. Major programmes are listed in § 81.4.2.

The requirement of selecting a Major programme upon entry should not be throught of as being necessarily a final commitment. The Fine Arts programme is designed to be flexible enough to allow for changes of orientation, subject, of course, to limitations in the case of certain programmes in great demand.

A ''Minor'' is made up of an approved sequence of 30 credits. The term ''Double Minor'' states that the student has followed, within the requirements for the BFA degree, a planned programme of study in two speciaized fields, with a lower degree of concentration in either than is afforded by a Major Programme. A student may select any two of the Minors to form a ''Double Minor''. Minor Programmes are listed beginning in § 81.4.3.

81.3.3 RESIDENCY REQUIREMENTS

For a BFA with Majors in Art Education, Graphic Design and Visual Arts, at least 30 credits in the studio and 6 credits in Art History must be taken at Concordia. Ordinarily this will imply that the full-time student must enroll for two years of study at Concordia University.

81.3.4 PROGRAMME ADVISORS

Art History and Studio Art:
D. ANDRUS
R. GREENBERG
S. PAIKOWSKY
G. WALTERS.

Art History and Studio Art
D. ANDRUS

Art Education:
S. HORNER
F. BARRY

Drama:
P. SPENSLEY

Fine Arts:
P. COHEN
S. HORNER
N. SPRINGFORD
J. LOCKE

Graphic Design:
C. GABRIEL-LACKI
F. MULVEY

Cinema:
J. LOCKE

Music:
P. COHEN

Theatre Arts:
N. SPRINGFORD

Visual Arts:
D. JONES
J. MILLER
J. I. SMITH
B. WAINWRIGHT

Honours Programme is listed in § 81.4.1
Major Programmes are listed beginning in § 81.4.2
Minor Programmes are listed beginning in § 81.4.3

81.3.5 BFA HONOURS PROGRAMME REQUIREMENTS

The University has approved programmes leading to an Honours degree in certain selected fields. An Honours degree indicates specialization within a field, and high academic standing. In order to qualify for an Honours degree a student must meet all of the academic qualifications and comply with the regulations set forth below.

1. A candidate for an Honours degree should indicate such intention at registration and consult the Honours Representative of the department(s) concerned as soon as possible. Acceptance as an Honours student will depend on performance during the first year. The Honours standing will be reviewed annually.

A student who has followed the courses prescribed for the Honours programme and has met all the requirements may enter the programme with the approval of the Honours Representative any time before beginning the final 30 credits. No retroactive approval of entry may be made.

2. A student who enters with advanced standing may apply pro tanto credits which are applicable to the Honours degree requirements, upon approval by the department(s).

A transfer student must complete a minimum of 30 credits in the basic Honours programme in residence to receive a degree with Honours.

3. An Honours student must maintain a 'B' average with no grade lower than 'C' in all courses in the basic Honours programme.

An Honours student must meet the general degree requirements as well as the specific requirements for an Honours degree, and must obtain at least a 'C' average over the total degree programme.

Failure in any course will mean suspension or withdrawal from the Honours programme. Students who fail to meet acceptance requirements and who are required to withdraw from the Honours programme will proceed as majors. Reinstatement into the Honours programme is possible only by recommendation by the Honours representative.

4. A student shall be allowed to qualify for only one Honours degree in either a single or combined Honours programme.

5. A degree with Honours in any programme is granted upon graduation only with the approval of the Senate.

81.3.6 HONOURS COMMITTEE

Professor
B. ANGEL, Chairman

Professor
J. STEWART

Professor
E. SMITH

Assistant Professor
E. MARKLAND

Secretary
M. OSBORNE

Departmental Representative Art History
Assistant Professor S. PAIKOWSKY

81.3.7 DIPLOMA IN ART EDUCATION

The Faculty of Fine Arts offers a one year course leading to the Concordia University Diploma in Art Education.

This course is integrated with the Bachelor of Fine Arts, (Art Education Major) to provide a continuous pattern of studies preparing art specialists for teaching in elementary and secondary schools.

In order to qualify for admission students must have completed the Concordia University Bachelor of Fine Arts, (Art Education Major) or the equivalent. Graduates of other institutions will be considered if they have had the equivalent of an undergraduate major in studio work and can present an acceptable portfolio. They will be expected to make up the Education and Art Education courses included in the Bachelor of Fine Arts, (Art Education Major).

The Diploma Course is offered in the Day Division only. Graduates who have been awarded the Diploma in Art Education meet the requirements for a Specialists Certificate in Art, awarded by the Quebec Board of Education. Detailed course descriptions will be found in the Graduate Studies Calendar.

81.4 Programmes

Students Note:
It is anticipated that introductory courses will be available on both campuses, however, advanced courses may be restricted to one campus only. Students should consult their Timetables for further information.

81.4.1 HONOURS PROGRAMME

60 BFA Honours in Art History

30 Art History N-240[6], N-341[6], N-342[6], N-343[6], N-345[6]
30 Art History N-439[6], N-441[6], N-442[6], N-443[6], N-444[6], N-445[6], N-446[6], N-447[6], N-448[3], N-449[3],

Note: Students with CEGEP equivalent of N-240[6] may elect to take it for a credit given permission of the Department.

81.4.2 MAJORS PROGRAMMES

60 BFA Major in Art Education

Pattern A

15 Art N-430[3], N-432[6], Art Education N-400[6]
12 to 24 Lecture/seminar in Art or Art History
21* to 33 Visual Arts Studio Elec credits in Cinema (up to 9 may be chosen).

NOTE: Pattern A is recommended for teaching Studio and/or Art History at the secondary level.

Students applying for the Diploma in Art Education and in Teacher Certification must take Education N-201 or Education N-210 and 6 credits at the '400' level in Education.

**The remainder of 60 credits*

60 BFA Major in *Art Education

Pattern B

15 Art N-430[3], N-432[6], Art Education N-400[6]
15 Visual Arts Studio Elec
6 Art History Elec
24 Elec chosen from Music, Theatre Arts, Cinema.

NOTE: Pattern B is recommended for teaching the "expressive" arts at the elementary level or for inter-arts education.
**Students applying for the Diploma in Art Education and in Teacher Certification must take Education N-201 or Education N-210 and 6 credits at the '400' level in Education.*

60 BFA Major in Art History

42 Art History N-240[6], N-341[6], N-342[6], N-343[6], N-443[6], N-444[6], N-447[6]
18* Art History N-240[6], N-345[6], N-441[6], N-442[6], N-445[6], N-446[6], Art N-460[6].

NOTE: Students with CEGEP equivalent of N-240[6] may elect to take it for a credit given permission of the Department.
**Up to 12 credits may be substituted for Art History courses. These credits may be selected from the Fine Arts Department or other departments.*

66 BFA Major in Art History and Studio Art

6 Art History N-240[6]
30* Art History N-341[6], N-342[6], N-343[6], N-345[6], N-441[6], N-442[6], N-443[6], N-444[6], N-446[6], N-447[6]
30 Visual Arts Studio Elec (6 credits) may be from Theatre Arts N-255[6], Cinema N-311[6], or Music N-235[6], N-335[6], N-471[3], N-485[3]).

**Art N-460[6] or N-461[6] may be substituted for 6 credits in Art History.*

60 BFA Major in Fine Arts

A major consists of 60 credits selected from at least three of the following sections with a maximum of 24 credits selected from any one section:

Visual Arts
Art History Section
Art History N-240[6]
Art History N-342[6]
Art History N-343[6]
Art History N-345[6]
Art History N-443[6]
Art History N-444[6]
Art History N-445[6]

Visual Arts
Studio Section
Art N-200[6]
Art N-430[6]
Design N-201[3]
Drawing N-200[6]
Painting N-200[6]

Theatre Arts Section
Theatre Arts N-247[6]
Theatre Arts N-255[6]
Theatre Arts N-315[6]
Theatre Arts N-331[6]

Music Section
Music N-235[6]
Music N-245[6]
Music N-321[6]
Music N-341[6]
Music N-343[3]
Music N-345[3]
Music N-421[6]

Cinema Section
Cinema N-211[6]
Cinema N-212[6]
Cinema N-311[6]
Cinema N-312[6]

81.4.2 MAJORS PROGRAMMES (CONT'D)

60 BFA Major in Graphic Design

6 Art History Elec
6 Lecture/seminar Elec in Art or Art History
12* Photography N-201[3], Design N-201[3], Graphic Design N-200[6].
18 Graphic Design N-201[3], N-300[6], N-301[3], N-400[6], N-450[6]
18 Studio Art Elec

**Students should take Graphic Design N-200[6], Design N-201[3] concurrently in first term of first year.*

60 BFA Major in Music

6 Music N-235[6] or equivalent
21 to 24 Music N-231[3] or N-232[6]. N-321[6], N-335[6], N-341[6].
30 to 33 Music Elec (in consultation with Department)

NOTE: A student granted exemption from Music N-235 will substitute another 6 credits in Music chosen in consultation with the Department.

48 BA Major in Music

6 Music N-235[6] or equivalent
12 Music N-321[6], N-341[6]
30 Music Elec chosen in consultation with the Department.

NOTE: A student granted exemption from Music N-235 will substitute another credit in Music chosen in consultation with the Department.

60 BFA Major in Theatre Arts

24 Theatre Arts N-212[6], N-247[6], N-255[6], N-421[6].
36 Theatre Arts N-312[6], N-315[6], N-331[6], N-340[6], N-355[6], N-413[6], N-431[6], N-455[6].

60 BA Major in Drama

27 Drama 301A[3], 311A/B[3], 341Z[6], 351B[3], 341Z[6], 351B[3], 401B[3], 501A[3], 551B[3].
21 Drama Elec
12 Drama Literature Elec

60 BFA Major in Visual Arts

6 Art History Elec
6 Lecture/seminar Elec in Art or Art History
48 Visual Arts Studio Elec (6 credits) may be taken from Theatre Arts N-212[6], N-255[6]; Cinema N-311[6], N-312[6]; Music N-231[6], N-235[6], N-335[6], N-421[6], N-465[3], N-471[3], N-485[3], N-486[3].

81.4.3 MINORS PROGRAMMES

30 Minor in Art History

18 Art History N-342[6], N-343[6], N-444[6].
12 Art History N-341[6], N-345[6], N-441[6], N-442[6], N-443[6], N-445[6], N-446[6], N-448[6], N-449[6].

30 Minor in Cinema

12 Cinema N-211[6], N-212[6]
18 Credits in Cinema or 12 Credits in Cinema and French N-461[6].

NOTE: Students who received credit for Cinema 211 or Cinema 212 before September 1971 must consider these courses equivalent to Cinema N-311 and Cinema N-312 respectively for the purpose of fulfilling degree requirements.

30 Minor in Music

6 Music N-235[6], or equivalent
24 Music Elec, including 12 credits at the '300' and '400' level, to be chosen in consultation with the Department.

NOTE: A student granted exemption from Music N-235 will substitute another 6 credits in Music chosen in consultation with the Department.

30 Minor in Theatre Arts

12 Theatre Arts N-212[6], N-255[6].
18 Theatre Arts N-247[6], N-312[6], N-315[6], N-331[6], N-340[6], N-355[6], N-413[6], N-421[6], N-431[6], N-455[6].

30 Minor in Visual Arts

12 to 18 Art N-200[6], Design N-201[3], Drawing N-200[6], N-300[6], Painting N-200[6], N-300[6], Photography N-201[3], N-301[3].
12 to 18 Art History N-341[6], N-342[6], N-343[6], N-345[6], N-441[6], N-443[6], N-444[6], N-445[6], N-446[6].

81.5 Fine Arts: Faculty

Professor and Chairman of the Department (Sir George Williams Campus)
EDWY F. COOKE

Assistant Professor and Acting Chairman of the Department (Loyola Campus)
GERALD GROSS

Professors
ALFRED PINSKY
LEAH SHERMAN

Associate Professors
PHILIP COHEN
CHRISTOPHER GABRIEL-LACKI
YVES GAUCHER
HARDY GEORGE
STANLEY HORNER
JUDITH KELLY
JEROME KRAUSE
F. JOHN MILLER
GUIDO MOLINARI
FRANK MULVEY
JOHN IVOR SMITH
NORMA SPRINGFORD

Assistant Professors
DONALD F. P. ANDRUS
FRANK BARRY
WOLFGANG BOTTENBERG
F. GRAEME CHALMERS
MERVYN DEWES
JEAN GOGUEN
RUSSELL T. GORDON
REESA GREENBERG
ANDRÉ HERMAN
ELLEN JAMES
DENNIS JONES
PATRICK LANDSLEY
JOHN LOCKE
HENRI MONGRAIN
SANDRA PAIKOWSKY
WILLIAM REZNICEK
WALTER KENT SLOAN
JERRY G. SMOKE
PHILIP SPENSLEY
BARRY WAINWRIGHT
GARY WALTERS
IRENE WHITTOME

Visiting Associate Professor
J. RUSSELL HARPER

Special Lecturer
ORSON WHEELER

Lecturer
JANICE TURNER

81.6 Visual Arts

81.6.1 PROGRAMMES

60 BFA Major in Art Education

Pattern A

15 Art N-430[3], N-432[6], Art Education N-400[6]

12 to 24 Lecture/seminar in Art or Art History

21* to 33 Visual Arts Studio Elec (up to 9 credits in Cinema may be chosen).

NOTE: Pattern A is recommended for teaching Studio and/or Art History at the secondary level.
Students applying for the Diploma in Art Education and in Teacher Certification must take Education N-201 or Education N-210 and 6 credits at the '400' level in Education.
**The remainder of 60 credits*

60 BFA Major in *Art Education

Pattern B

15 Art N-430[3], N-432[6], Art Education N-400[6]
15 Visual Arts Studio elec.
6 Art History elec.
24 Elec. chosen from Music, Theatre Arts, Cinema

NOTE: Pattern B is recommended for teaching the "expressive" arts at the elementary level or for inter-arts education.
**Students applying for the Diploma in Art Education and in Teacher Cerfification must take Education N-201 or Education N-210 or Education N-210 and 6 credits at the '400 level in Education.*

66 BFA Major in Art History and Studio Art

6 Art History N-240[6]
30* Art History N-341[6], N-342[6], N-343[6], N-345[6], N-441[6], N-442[6], N-443[6], N-444[6], N-446[6], N-447[6]
30 Visual Arts Studio Elec (6 credits) may be from Theatre Arts N-255[6], Cinema N-311[6], or Music N-235[6], N-335[6], N-471[3], N-485[3]).

**Art N-460[6] or N-461[6] may be substituted for 6 credits in Art History.*

60 BFA Major in Fine Arts

A major consists of 60 credits selected from at least three of the following sections with a maximum of 24 credits selected from any one section:

Visual Arts Art History Section
Art History N-240[6]
Art History N-342[6]
Art History N-343[6]
Art History N-345[6]
Art History N-443[6]
Art History N-444[6]
Art History N-445[6]

Visual Arts Studio Section
Art N-200[6]
Art N-430[6]
Design N-201[3]
Drawing N-200[6]
Painting N-200[6]

Theatre Arts Section
Theatre Arts N-247[6]
Theatre Arts N-255[6]
Theatre Arts N-315[6]
Theatre Arts N-331[6]

Music Section
Music N-235[6]
Music N-245[6]
Music N-321[6]
Music N-341[6]
Music N-343[3]
Music N-345[3]
Music N-421[6]

Cinema Section
Cinema N-211[6]
Cinema N-212[6]
Cinema N-311[6]
Cinema N-312[6]

60 BFA Major in Graphic Design

6 Art History Elec
6 Lecture/seminar Elec in Art or Art History
12* Photography N-201[3], Design N-201[3], Graphic Design N-200[6].
18 Graphic Design N-201[3], N-300[6], N-301[3], N-400[6], N-450[6].
18 Studio Art Elec

**Student should take Graphic Design N-200[6], Design N-201[3] concurrently in first term of first year.*

60 BFA Major in Visual Arts

6 Art History Elec
6 Lecture/seminar Elec in Art or Art History
48 Visual Arts Studio Elec (6 credits) may be taken from Theatre Arts N-255[6], N-212[6], Cinema N-311[6], N-312[6]: Music N-231[6], N-235[6], N-335[6], N-421[6], N-465[3], N-471[3], N-485[3], N-486[3].

30 Minor in Visual Arts

12 to 18 Art N-200[6], Design N-201[3], Drawing N-200[6], N-300[6], Painting N-200[6], N-300[6], Photography N-201[3], N-301[3].

12 to 18 Art History N-341[6], N-342[6], N-343[6], N-345[6], N-441[6], N-443[6], N-444[6], N-445[6], N-446[6].

81.6.2 COURSE DESCRIPTIONS

ART N-200 (200)
Studio Art I
An introduction to studio art including drawing, painting, design, sculpture and related media. (6 credits) *NOTE A/See § 200.3*

ART N-430 (452)
Multi-Media
Prerequisites: Eighteen credits in studio courses. The technology of video, film, slides, sound, etc. as media for the artist and art educator. (3 credits)

ART N-432 (432)
Crafts
Prerequisites: Eighteen credits in studio courses. The basis of crafts such as ceramics, textiles, metal work, leathercraft, etc. as potential media for the artist and art educator. (6 credits)

ART N-434 (434)
Materials and Methods of the Artist
Prerequisite: Permission of the Department. Through a series of special projects this course will familiarize the student with some of the various materials, techniques and other aspects of the artist's craft. Since special emphasis will be given to historical techniques, this course is particularly recommended to all students in art history. Lectures and studio periods. (6 credits)

ART N-436 (435)
Studio Workshop: Special Studies.
Prerequisites: 3rd year standing and permission of the Department. This course will provide the opportunity for a limited number of students to pursue advanced studies in the studio area. (6 credits)

ART N-460 (431)
Analysis of Great Works of Art
A course in art principles, through the formal analysis of selected masterpieces of painting and sculpture. The student is led to a fuller comprehension of the nature of formal order in the arts. (6 credits)

ART N-461 (461)
Introduction to Aesthetics
This course provides an introduction to the philosophy and psychology of aesthetics. Topics will include the nature of beauty and art, aesthetic experience, symbolic thinking and expression; art as symbolic activity, art as communication and the principles of formal organization underlying all the arts: music, poetry, drama, sculpture, and painting. (6 credits)

ART EDUCATION N-200 (200)
Art for Classroom Use
A practical and theoretical course of particular use to teachers and those interested in early childhood development. Concepts of art education, the use of materials and techniques are considered in relation to classroom situations. Students are introduced to various art media including painting, collage construction, printing and modelling. The course includes the use of slides, films and selected readings. (6 credit) *NOTE A/See § 200.3*

ART EDUCATION N-400 (400)
Seminar in Art Education
Prerequisite: Art education majors or permission of the Department. The development of a philosophy of art education on the basis of studio experiences, readings, the observation of and participation in teaching situations, etc. (6 credits) *NOTE A/See § 200.3*

CERAMICS N-200 (200)
Ceramics I
Prerequisite: Art Education major or permission of the Department. An introduction to clay as an art medium. The student will investigate the various techniques for forming, shaping and decorating clay for firing and glazing. (6 credits)

DESIGN N-201 (201)
Design I
Prerequisites: CEGEP Studio Art or Art 001 and 002 or the equivalent. The dynamics and structures of two and three dimensional design. (3 credits) *NOTE A/See § 200.3*

DESIGN N-301 (301)
Design II
Prerequisite: Design N-201 Continuation of Design N-201. (3 credits) *NOTE A/See § 200.3*

DRAWING N-200 (200)
Drawing I
Prerequisites: CEGEP Studio Art or Art 001 and 002 or the equivalent. An exploration of drawing as space, the figure, visual skills, graphic image. (6 credits) *NOTE A/See § 200.3*

DRAWING N-300 (300)
Drawing II
Prerequisite: Drawing N-200. A drawing course in which various media and forms of expression will be explored at the more advanced level. Lectures and studio periods. (6 credits)

DRAWING N-400 (400)
Drawing III
Prerequisite: Drawing N-300. Continuation of Drawing N-300. (6 credits)

GRAPHIC DESIGN N-200 (200)
Graphic Design I
Prerequisite: Design N-201. It is recommended that students majoring in Graphic Design take Design N-201 and Graphic Design N-200 concurrently. The application of visual ideas to communication processes. (6 credits) *NOTE A/See § 200.3*

GRAPHIC DESIGN N-201 (201)
Typography and Lettering.
Prerequisite: Graphic Design N-200 previously or concurrently. Basic study and application of lettering and typography in graphic communication. (3 credits) *NOTE A/See § 200.3*

GRAPHIC DESIGN N-300 (301)
Graphic Design II
Prerequisite: Graphic Design N-200. An intermediate design course which deals with various aspects of visual invention and expression. Problem solving and visual analysis are practised in projects. Work is related to the student's field of interest. (6 credits) *NOTE A/See § 200.3*

GRAPHIC DESIGN N-301 (301)
Graphic Communication
Prerequisite: Design N-201, Graphic Design N-200, N-201. An intermediate design course which deals with various aspects of graphic communication. (3 credits) *NOTE A/See § 200.3*

GRAPHIC DESIGN N-400 (400)
Graphic Design III
Prerequisite: Graphic Design N-300. Students will experiment with a variety of media and be individually directed in planning and completing their design projects. (6 credits) *NOTE A/See § 200.3*

GRAPHIC DESIGN N-450 (450)
Advanced Graphic Communication.
Prerequisites: Design N-201, Graphic Design N-300, N-301. A continuation of Graphic Design N-301. (6 credits) *NOTE A/See § 200.3*

PAINTING N-200 (200)
Painting I
Prerequisites: CEGEP Studio Art or Art 001 and 002 or the equivalent. An exploration of painting, colour, style, image, visual skills and the technology of painting materials. (6 credits) *NOTE A/See § 200.3*

PAINTING N-300 (300)
Painting II
Prerequisite: Painting N-200. A course in which various media and forms of expressions will

be explored at the more advanced level. (6 credits) *NOTE A/See § 200.3*

PAINTING N-400 (400)
Painting III
Continuation of Painting N-300. (6 credits) *NOTE A/See § 200.3*

PAINTING N-450 (450)
Advanced Studio in Painting
Prerequisite: Painting N-400 previously or concurrently. (6 credits) *NOTE A/See § 200.3*

PHOTOGRAPHY N-201 (201)
Photography I
Prerequisite: CEGEP Studio Art or Art 001 and 002 or the equivalent. The use of photography and light as a source of image, ideas. (3 credits) *NOTE A/See § 200.3*

PHOTOGRAPHY N-301 (301)
Photography II
Prerequisite: Photography N-201. A continuaction of Photography N-201. (3 credits) *NOTE A/See § 200.3*

PRINTMAKING N-200 (200)
Printmaking I
Prerequisite: Drawing N-200 previously or concurrently. A study of the basic principles of printmaking through experience with various approaches both traditional and contemporary. A student may specialize in lithography, serigraphy, or relief and intaglio. (6 credits) *NOTE A/See § 200.3*

PRINTMAKING N-300 (300)
Printmaking II
Prerequisite: Printmaking N-200. Continuation of Printmaking N-200. (6 credits) *NOTE A/See § 200.3*

PRINTMAKING N-400 (400)
Printmaking III
Prerequisite: Printmaking N-300. Continuation of Printmaking N-300. (6 credits) *NOTE A/See § 200.3*

SCULPTURE N-200 (200)
Sculpture I
Prerequisite: CEGEP Studio Art or Art 001 and 002 or the equivalent. An investigation into the methods, materials and modes of expression in sculpture. Both traditional and contemporary materials and techniques will be used. (6 credits) *NOTE A/See § 200.3*

SCULPTURE N-300 (300)
Sculpture II
Prerequisite: Sculpture N-200. Continuation of Sculpture N-300. (6 credits) *NOTE A/See § 200.3*

SCULPTURE N-400 (400)
Sculpture III
Prerequisite: Sculpture N-300. Continuation of Sculpture N-300. (6 credits) NOTE A/see § 200.3

LOYOLA CAMPUS ONLY

ART 326
(Also listed as Inte 306Z § 51.15.12
Students will study works of art depicting sport in various periods and places. Works in several media representative of the culture of their origin will be selected, as well as documents treating the culture from anthropological, historical and sociological perspectives. The course will be conducted jointly by members of several departments as well as by invited speakers. (6 credits)

STUDIO ART 325
Aesthetic in Design and Colour
A study of the functional and aesthetic elements of design and colour. The relationship between design and the environment. Trends in contemporary aesthetic thinking will be reviewed. The course takes the form of a group seminar, practical studio work, selected readings and critical analysis. (3 credits)

STUDIO ART 370
Interior Design
An introductory course, surveying the cultural and aesthetic implications of interior design with discussions of design fundamentals, principles, materials, colour, texture and lighting related with practical exercises investigating and illustrating these topics. An introduction to drafting and its uses in interior design. (3 credits)

STUDIO ART 421
Industrial Design
A course integrating applied design of various media in areas of display, exhibits, product design and industrial design. Emphasis placed on designing and communicating to the client and public. The student is involved in space planning, use of materials, human engineering and professional presentation techniques. (3 credits)

STUDIO ART 480
Anatomy and Drawing
Prerequisites: Art 200, Drawing 200, Design 201. Basic anatomy in drawing the human figure will be taught. Both static and action poses will be dealt with. Special emphasis will be placed on portraiture. Anatomical analysis, including proportion, will be investigated. (3 credits)

81.7 Art History

81.7.1 PROGRAMMES

60	BFA Honours in Art History
30	Art History N-240[6], N-341[6], N-342[6], N-343[6],N-345[6]
30	Art History N-439[6], N-441[6], N-442[6], N-443[6], N-444[6], N-445[6], N-446[6], N-447[6], N-448[3], N-449[3]

NOTE: Students with CEGEP equivalent of N-240[6] may elect to take it for a credit given permission of the Department.

60	BFA Major in Art History
42	Art History N-240[6], N-341[6], N-342[6], N-343[6], N-443[6], N-444[6], N-447[6]
18*	Art History N-240[6], N-345[6], N-441[6], N-442[6], N-445[6], N-446[6], Art N-460[6]

NOTE: Students with CEGEP equivalent of N-240[6] may elect to take it for a credit given permission of the Department.
**Up to 12 credits may be substituted for Art History courses. These credits may be selected from the Fine Arts Department or other departments.*

30	Minor in Art History
18	Art History N-342[6], N-343[6], N-444[6]
12	Art History N-341[6], N-345[6], N-441[6], N-442[6], N-443[6], N-445[6], N-446[6], N-448[3], N-449[3]

81.7.2 COURSE DESCRIPTIONS

ART HISTORY N-240 (240)
Introduction to Art History
A study of selected works which represent outstanding and significant achievements in the visual arts. (6 credits)
NOTE: Students who have had the CEGEP equivalent of Art N-240 need not take it as part of their major programme but may elect to take it with the permission of the Department. NOTE A/See § 200.3.

ART HISTORY N-249 (249)
Canadian Sculpture and Architecture
A study of the more important developments of Canadian architecture and sculpture from indigenous forms to contemporary work. (6 credits). *NOTE A/See § 200.3*

ART HISTORY N-341 (241)
Art in the Ancient World
This course will consider the emergence of art and architecture in the ancient world, giving particular attention to developments in Egypt, Greece and Rome. (6 credits). *NOTE A/See § 200.3*

ART HISTORY N-342 (242)
The Renaissance in Italy
A survey of painting, sculpture and architecture in Italy during the fifteenth and sixteenth centuries. (6 credits) *NOTE A/See § 200.3*

ART HISTORY N-343 (243)
The History of Nineteenth Century Art
Starting with the French Revolution and Neo-Classicism, this course will examine Romanticism, Realism, Naturalism, Impressionism, Post-Impressionism and other nineteenth century European movements leading to the emergence of Fauvism in the twentieth century. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-345 (245)
Art in the Twentieth Century
Prerequisite: Art History N-240 or N-343. Commencing with Cubism, this course will examine the main movements and trends which have occured in western art during this century. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-439 (439)
Iconography
Prerequisite: Art History N-240. This course will examine recurring visual symbols in Western Art which are derived from Classical or Christian literature. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-441 (441)
The History of Medieval Art
Prerequisite: Art History N-240. This course will survey the growth of European art and architecture from Early Christian times through the fourteenth century. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-442 (442)
The Renaissance in Northern Europe
Prerequisite: Art History N-240 or N-342. This course will investigate the development of art in France, Flanders, Germany and Austria in the fifteenth and sixteenth centuries. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-443 (443)
History of Baroque and Rococo Art
Prerequisite: Art History N-240. This course will investigate the major achievements in Dutch, Flemish, English, French, Italian, Spanish, German and Austrian art and architecture in the seventeenth and eighteenth centuries. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-444 (444)
The Arts in Canada
Prerequisite: Art History N-240. A history of the arts in Canada from the 17th century to the present day. Where relevant, special attention will be given to those European and American influences which have shaped its growth. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-445 (445)
American Art and the European Background.

Prerequisite: Art History N-240. A survey of American Art from earliest colonial times into the 20th century, viewed against the background of those European developments which have significantly affected it. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-446 (446)
History of Modern Architecture

An examination of the major building styles from the Georgian era through the 20th century with emphasis on the contributions of individual architects from Louis Sullivan to Mies van der Roche (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-447 (447)
Special Studies in the History of Art

Prerequisities: Twelve credits in Art History. Students in this course will examine and discuss selected aspects of art history. The areas chosen for consideration will vary from year to year according to the instructor's field of specialization. All students will be required to undertake a research projects, and to submit papers based on their investigations. (6 credits). *NOTE A/See § 200.3.*

ART HISTORY N-448 (448)
Special Topics in Art History

Prerequisites: Twelve credits in Art History or permission of the Department. A seminar for advanced students which will provide an opportunity for the study of limited and more specialized aspects of Art History. (3 credits). *NOTE A/See § 200.3.*

ART HISTORY N-449 (449)
Special Topics in Art History

Prerequisite: Permission of the Department. A student repeating Art History N-448 for a second time registers under Art History N-449 for credits. (3 credits). *NOTE A/See § 200.3.*

ART HISTORY N-450 (450)
Advanced Studies in Art History

Prerequisites: 18 credits in Art History and permission of the Department. A course for advanced students which will provide for the study of limited and more specialized aspects of Art History. The areas chosen for study will vary from year to year according to the instructor's field of specialization. All students will be required to conduct research on selected aspects of the course topic. (6 credits).

81.8 Cinema

NOTE: I. An expanded programme is currently under consideration for implementation in the Fall of 1975.
II. All *Cinema* Courses were formerly titled *Moving Pictures*.

81.8.1 PROGRAMMES

30 **Minor in Cinema**

12 Cinema N-211[6], N-212[6]
18 Credits in Cinema or 12 Credits in Cinema and French N-461[6]

NOTE: Students who received credit for Cinema 211 or Cinema 212 before September 1971 must consider these courses equivalent to Cinema N-311 and Cinema N-312 respectively for the purpose of fulfilling degree requirements.

81.8.2 COURSE DESCRIPTIONS

CINEMA N-211 (257)
History of Film

A study of the history of film from its beginning to the 1950's. Changes in the forms, functions, aesthetics and technology of film will be dealt with through the examination of individual works seen in a chronological sequence. Weekly screenings. (6 credits).
NOTE A/See § 200.3
NOTE: A French section of this course will be offered under the direction of the Conservatory of Cinematographic Art.

CINEMA N-212 (258)
Film Aesthetics

A study of the aesthetics of film. Topics include film criticism, theories about the fundamental elements of film, and comparisons between films which do not depend on their date of production. Problems of film description, interpretation and evaluation will be discussed. Weekly screenings. (6 credits).
NOTE A/See § 200.3

CINEMA N-311 (211)
An introduction to Filmmaking I

Prerequisite: Cinema N-211 or N-212 previously or concurrently. An introductory course in the theory and practice of filmmaking. This course will stress the individual student's creative efforts in producing films in Super 8 or 16mm. Lectures and laboratory periods. (6 credits).

NOTE: i) Students who received credit for Cinema 211 prior to September 1971 may not take this course for credit.
ii) Students are required to bear the cost of film stock, processing, printing and other materials.

CINEMA N-312 (212)
Animation I

Prerequisites: Cinema N-311 or 6 credits from studio courses in the visual arts. Written permission of the Department. The theory and practice of animation. Lectures and studio periods. (6 credits).
NOTE A/See § 200.3

NOTE: i) Students who received credit for Cinema 212 prior to September 1971 may not take this course for credits.
ii) Students are required to bear the cost of film stock, processing printing and other materials.

CINEMA N-313 (313)
Animation II

Prerequisites: Cinema N-312 and written permission of the Department. A student repeating Cinema N-312 for a second time registers under Cinema N-313. (6 credits).

NOTE: Students are required to bear the cost of film stock, processing, printing and other materials.

CINEMA N-321 (321)
The Art of Film Directors

A concentrated study of the work of several major directors from different periods in film history. Each director's work will be examined in detail with representative films from distinct periods. The films will be considered in terms of thematic and stylistic consistency and variation as well as biographical, social and political factors. Weekly screenings. (6 credits).

CINEMA N-411 (411)
Filmmaking II

Prerequisites: Cinema N-311 and written permission of the Department. An intermediate course in the theory and practice of filmmaking. Lip sync 16mm production is introduced in all its aspects: cinematography, sound recording, editing. Lectures and laboratory periods. (6 credits).

NOTE: Students are required to bear the cost of film stock, processing, printing and other materials.

CINEMA N-412 (412)
Filmmaking III

Prerequisites: Cinema N-212 and N-411 and written permission of the Department. The completion of an advanced 16mm film project including its writing, design, production and editing. (6 credits).
NOTE A/See § 200.3

NOTE: Students are required to bear the cost of film stock, processing, printing and other materials.

CINEMA N-413 (413)
Filmmaking III

Prerequisites: Cinema N-412 and written permission of the Department. A student repeating Cinema N-412 for a second time registers under Cinema N-413. (6 credits).

NOTE: Students are required to bear the cost of film stock, processing, printing and other materials.

CINEMA N-420 (420)
Special Topics in Cinema

Prerequisite: Written permission of the Department. A course for advance students which will provide an opportunity for the study of limited and more specialized aspects of cinema. (3 credits)
NOTE A/See § 200.3

CINEMA N-421 (421)
Special Topics in Cinema

Prerequisite: Written permission of the Department. A student repeating Cinema N-420 for a second time registers under Cinema N-421. (3 credits)

CINEMA N-426 (426)
English Canadian Film

A survey of English Canadian film from the earliest surviving works to the present. Topics include fiction, documentary, animation and experimental film. The role of the National Film Board will be discussed. Weekly screenings. (3 credits).

CINEMA N-427 (427)
Quebec Film

A survey of Quebec film with an emphasis on contemporary works. The unique cultural and economic aspects of these films will be discussed. (3 credits).

NOTE: A French section of this course will be offered under the direction of the Conservatory of Cinematographic Art.

CINEMA N-431 (431)
Sound for Film

Prerequisites: Cinema N-311 and written permission of the Department. Creative and experimental exercises in the use of sound with moving images. (6 credits).

81.9 Music

NOTE Further courses are currently under consideration for implementation in the Fall of 1975.

81.9.1 PROGRAMMES

60 BFA Major in Music

6	Music N-235[6] or equivalent
21 to 24	Music N-231[3] or N-232[6], N-321[6], N-335[6], N-341[6].
30 to 33	Music Elec (in consultation with Department)

NOTE: A student granted exemption from Music N-235 will substitute another 6 credits in Music chosen in consultation with the Department.

48 BA Major in Music

6	Music N-235[6] or equivalent
12	Music N-321[6], N-341[6]
30	Music Elec chosen in consultation with the Department.

NOTE: A student granted exemption from Music N-235 will substitute another credit in Music chosen in consultation with the Department.

30 Minor in Music

6	Music N-235[6], or equivalent
24	Music Elec including 12 credits at the '300' and '400' level, to be chosen in consultation with the Department.

NOTE: A student granted exemption from Music N-235 will substitute another 6 credits in Music chosen in consultation with the Department.

81.9.2 COURSE DESCRIPTIONS

MUSIC N-231 (231)
Private Study A I

Prerequisite: Permission of the Department. This course offers individual or group instruction in an approved area of music with a qualified teacher of the student's choice. Students should understand that fees will vary with individual instructors. A student continuing Music N-231 registers for credits under Music N-331 and Music N-431. (3 credits).

MUSIC N-232 (232)
Private Study B I

Prerequisite: Permission of the Department. This course offers individual or group instruction in an approved area of music with a qualified teacher of the student's choice. Students should understand that fees will vary with individual instructors. A student continuing Music N-232 registers for credits under Music N-332 and Music N-432. (6 credits).

MUSIC N-233 (233)
Understanding Music

A course in analytical listening for the student who has little or no musical background. The works studied represent the major styles and idioms of Western music. (3 credits).

MUSIC N-235 (234)
Musicianship

Prerequisite: CEGEP Music Programme or equivalent or permission of the Department. A workshop in the organization and uses of sound materials. The programme integrates theory with composition, analysis and guided listening. Opportunities are provided for self-paced study in a variety of traditional, contemporary and experimental areas, including music for film and T.V. Classroom and guided listening. (6 credits).
NOTE A/See § 200.3

MUSIC N-245 (245)
Music History and Society

A survey of musical styles in their social context, from pre-history to the present day. While emphasis is on the mainstream of the western tradition, attention is also given to folk, popular and jazz styles, as well as the music of other cultures. (6 credits).
NOTE A/See § 200.3

MUSIC N-321 (423)
Aural Perception

A self-paced workshop in ear training. Hearing skills are developed through exercises in aural concentration, recall, reproduction, imagination, analysis, and transcription. The sound materials used range from traditional to electronic, natural and mechanical. Classrom and laboratory. (6 credits).

MUSIC N-331
Private Study A II

Prerequisite: Music N-231 and permission of the Department. A student repeating Music N-231 for a second time registers under Music N-331 for credits. (3 credits).

MUSIC N-332
Private Study B II

Prerequisite: Music N-232 and permission of the Department. A student continuing Music N-232 registers for credits under Music N-332. (6 credits).

MUSIC N-335 (271, 431, 461)
Theory/Composition Studio I

Prerequisite: Music N-235 or permission of the Department. A study that co-ordinates exercises in part-writing and harmony with composition. Students work in a variety of traditional and contemporary forms, styles, and media. Classroom and laboratory. (6 credits).

MUSIC N-336 (336)
Ensemble Studio I: Early Music

Prerequisite: Permission of the Department. A study through performance of the pre-classical vocal/instrumental repertoire. The fundamentals of style, interpretation, transcription and related problems will be studied in representative works. Whenever possible students will practice on models of historically authentic instruments. Classroom and practice periods. A student continuing Music N-336 registers for credits under Music N-337. (3 credits).

MUSIC N-337 (337)
Ensemble Studio I: Early Music

Prerequisite: Permission of the Department. A

student continuing Music N-336 registers for credits under Music N-337. (3 credits).

MUSIC N-341 (441)
Classic-Romantic Through 20th Century Music
Prerequisite: 6 credits in Music or permission of the Department. A study of representative works from the 18th through the 20th century. Styles will be analyzed in light of the historical forces that have helped shape the course of Western music. Classroom and guided listening. A student continuing Music N-341 registers for credits under Music N-342. (6 credits).

MUSIC N-342 (441)
Seminar in History and Literature of Music
Prerequisite: Permission of the Department. A student repeating Music N-341 for a second time registers for credits under Music N-342. (3 credits).

MUSIC N-343 (443)
Introduction to Non-Western Music
Prerequisite: Permission of the Department. A survey of the art, religious and folk music of non-European cultures. The study includes an examination of cross-cultural parallels and influences, instruments, notations, textures, techniques of performance and problems of interpretation. Illustrated with recordings and slides. (3 credits).

MUSIC N-345 (445)
Folk Music of North America
Prerequisite: Permission of the Department. A survey of the roots and development of traditional music in Canada, the United States, Mexico, Central America and the Caribbean. Areas covered include aboriginal, transplanted and hybrid forms; urban and rural musics; transcription and arrangement; the influence of folk music on popular art styles; ethnomusicological method. Illustrated with recording, slides and whenever possible live performances. (3 credits).

MUSIC N-351 (251)
Stylistic and Formal Analysis
Prerequisites: Two full courses in Music or permission of the Department. A comparative study of selected works representing various forms, styles and historical periods. (3 credits).
NOTE A/See § 200.3

MUSIC N-352 (251)
Stylistic and Formal Analysis
Prerequisite: Permission of the Department. A student repeating Music N-351 for a second time registers for credits under Music N-352. (3 credits).

MUSIC N-421 (421)
Music in Education
Prerequisite: Permission of the Department. This course is designed to give the student a working knowledge of contemporary techniques of group instruction in music. At least one established or experimental method is covered in some depth; for example, Orff, Kodaly, Dalcroze, Martentot, Schafer, Dennis. While the main emphasis is on the cultivation of musicality in the preschool and elementary school child, the implications for music education in general are also explored. Classroom work includes opportunities for demonstration and practice teaching. (6 credits).

MUSIC N-431
Private Study A III
Prerequisites: Music N-231 and N-331 and permission of the Department. A student continuing Music N-331 registers for credits under Music N-431. (3 credits).

MUSIC N-432
Private Study B III
Prerequisites: Music N-332 and permission of the Department. A student continuing Music N-332 registers for credits under Music N-432. (6 credits).

MUSIC N-435 (436)
Theory Composition Studio II
Prerequisite: Music N-335 or permission of the Department. A more advanced level continuation of Music N-335. While the study will emphasize contemporary writing techniques, it will include close work in traditional harmony and counterpoint. Classroom and laboratory. (6 credits).

MUSIC N-436 (436)
Ensemble Studio II: Traditional/Contemporary
Prerequisite: Permission of the Department. A study, through performance, of selected works from the traditional and contemporary repertoires. The works studied are determined by classroom needs and the particular skills of each student. A student continuing Music N-436 registers for credits under Music N-437. (3 credits).

MUSIC N-437 (437)
Ensemble Studio II: Traditional/Contemporary
Prerequisite: Permission of the Department. A student continuing Music N-436 registers for credits under Music N-437. (3 credits).

MUSIC N-465 (465)
Seminar in Performance
Prerequisite: Permission of the Department. This course examines selected problems in the development of performance skills. The areas covered are, whenever possible, determined by the specific interests of students. Topics for consideration include: technique; practice; style; interpretation; accompaniment; ensemble; teaching children; the adult student. (3 credits). *NOTE C/See § 200.3*

MUSIC N-466 (465)
Seminar in Performance
Prerequisite: Permission of the Department. A student repeating Music N-465 for a second time registers for credits under Music N-466. (3 credits).

MUSIC N-471 (471)
Independent Study
Prerequisite: Permission of the Department. An independent study intended primarily for the student who wishes to do research in an area of his own choice. He may alternatively elect to compose a large scale work or perform an approved programme in public recital. Staff members will be available for consultation. (3 credits). *NOTE C/See § 200.3*

MUSIC N-472
Independent Study
Prerequisite: Permission of the Department. A student repeating Music N-471 for a second time registers for credits under Music N-472. (3 credits).

MUSIC N-485 (485)
Contemporary Idioms and Media
Prerequisite: Permission of the Department. A study in depth of selected developments in contemporary music. In a given term, the study may include one or more of the following: Music for film, T.V., stage and mixed media; Jazz; Rock; electronic and computer composition, aleatory, free form, "brain", and experimental musics. Whenever possible provision will be made for public performance of student works. (3 credits). *NOTE C/See § 200.3*

MUSIC N-486
Contemporary Idioms and Media
Prerequisite: Permission of the Department. A student repeating Music N-485 for a second time registers for credits under Music N-486. (3 credits).

81.10 Drama (BA) Loyola Campus

The following Drama and Theatre Arts programmes are presently under study with a view to their reorganization. Students may enroll in either programme without prejudice. This means that whatever programmes are available in the future will be offered to students registering in the BFA programme at Sir George Williams campus and the BA at Loyola campus.

81.10.1 PROGRAMMES

60	**BA Major in Drama**	**BA Specialization in English and Drama**
27	Drama 301A[3], 311A/B[3], 351B[3], 341Z[6], 351B[3], 401A[3], 451B[3], 501A[3], 551B[3]	See Loyola Faculty of Arts and Science §51.10
21	Drama Elec	
12	Drama Literature Elec	

81.10.2 DRAMA LOYOLA CAMPUS

The specific aims of the drama programme are to provide students with enough knowledge and skills in this field with which they may decide to continue toward a teaching career in secondary education, toward a graduate programme, toward specialized professional training in the theatre or cultural animation, or to pursue their own interests without further formal development.

The general aim is to enrich the education and life of the student, within the context of the liberal arts degree, with the humanistic study of man's presentation of himself throughout history via dramatic literature and theatrical action.

The Drama programme offers a rigorous and integrated introduction to the theatre, balanced between practical experience and discipline on the one hand, and an academic study of theatre theory and dramatic literature on the other. All students in Drama pass through the same basic initial programme before deciding on a more individually oriented course of study.

The first year is intended as a grounding in the primary areas of drama: history, literature theory, acting, and technical production. The second year continues the streams of dramatic literature and theatre practice. The student becomes a part of a repertory company with opportunity to apply his knowledge and abilities. At this time the student may elect, in consultation with the drama faculty, a more specialized focus in either dramatic theory and criticism, acting, or technical production. For special requirements concerning these options students should consult the Co-ordinator of the Drama section.

Students wishing to major in Drama must successfully complete the first year's required Drama courses (301A, 341Z, 351B, 311A/B) with an aggregate 70% in order to be accepted into the Production Workshop sequence (Drama 401A, 451B, 501A, 551B).

81.10.3 COURSE DESCRIPTIONS

DRAMA 301A
Introduction to the Theatre

Study and nature of Drama, major forms and theories of theatrical presentation from the Greeks to present day, dramatic criticism, study of plays in performance. (3 credits).

DRAMA 311A/B (Formerly 361 A/B)
Scenography I: Scenic Crafts

Materials, equipment, tools, techniques, and the practice of scene construction, stage operation, and basic stage lighting. Projects include work on dramatic productions of the department. (3 credits).

NOTE Students planning to major in Drama with emphasis in Scenography should elect this course in the Fall term. (3 credits).

DRAMA 341Z
Acting

Developing the imaginative and physical life of the actor, including basics of improvisation, mime, movement, and voice. Scene and character analysis; preparation for working with a script. Students will prepare scenes and play excepts for inclass study. (6 credits).

DRAMA 351B
Canadian Theatre

The roles of the professional, amateur, and education practitioner, festivals, regionalism, arts councils, national bodies, and various outstanding theatre personalities; the cultural boom of the sixties and the study of selected Canadian plays in performance. (3 credits).

DRAMA 363B
Scenography II: Advanced Scenic Crafts.

Prerequisite: Drama 311A/B. A continuation of Drama 311A/B with emphasis on scene painting, the design and creation of stage properties, costumes and theatre graphics. Required of majors in Drama with emphasis in Scenography. (3 credits).

DRAMA 401A
Production Workshop

Prerequisites. Drama 341Z and 311A/B. Majors only. The operation of a theatre company. Students will assume basic acting, technical or administrative responsibilities within a production company formed in conjunction with students in Production Workshop III. Participation in one full-length play or a series of one-acts will be required. Roles, the play, and the

production responsibilities will be researched as necessary prior to or during rehearsals. Such research will be performance oriented. Directors of productions will be faculty or guest professional directors. The class will conduct indepth critical evaluations of production aspects following the end of performances. Each student's progress will be continually assessed. Student's participation in production workshop courses and in other courses will be determined by his development. Students are required to attend rehearsals evenings and weekends. (3 credits).

DRAMA 413A (Formerly Drama 511A Scenic and Lighting Design.)
Scenography IIIb: Scenic Design

Prerequisites: Design N-201, Drama 361B and consent of instructor. A studio course in the aesthetic and practical problems in the design of scenery for theatrical production. Brief consideration of the history of theatre architecture and decor. The application of basic elements of design to the theatrical medium. Advanced practice in drafting, rendering, and model making. (3 credits).

DRAMA 415A (Formerly Drama 461B)
Scenography IIIa: Advanced Technical Problems

Prerequisite: Drama 361B. The essential elements of technical theatre practice are delineated for planning, organization, preparation, and performance phases of various types of theatrical production. Stage and production management and technical direction. Students will assume positions of responsibility on theatre production. (3 credits).

DRAMA 421A or/and DRAMA 471B
Play Production for School and Community

Prerequisite: Permission of Department. For non-majors. Credit granted to individual students for practical Drama production activity at all levels, including university, outside the academic Drama programme. (3 or 6 credits)

DRAMA 431A
Quebec Theatre.

Concentration on the plays of Quebec writers and the Quebec cultural milieu. French and English performances will be attended. Meetings with performers will be held, and many aspects of the plays discussed. Guest speakers involved directly in Quebec theatre will be invited in from time to time to supplement lectures. (3 credits).

DRAMA 441Z
Voice and Movement Workshop

Prerequisite: Drama 341Z. Focus is on the development and integration of the actor's body and voice. Exercices for vocal and physical flexibility, relief from tension, expressiveness of gesture and body composition, spatial awareness, articulation and enunciation. (6 credits).

DRAMA 451B
Production Workshop II

Prerequisite: Drama 401A. Majors only. Operation of a theatre company continued. (3 credits).

DRAMA 463B
Scenography IIId: Costume.

Prerequisites: Drawing N-200 — Drawing I, and Drama 361B, or consent of instructor. Introduction to the design and construction of costumes for theatrical production. Some consideration will be given to the history of clothing. Costume design is seen as a manifestation of dramatic character and an extension of the actor's human form. Practical work in design, pattern making, cutting, draping and construction of stage costumes. Projects include work on costumes for theatre productions. (3 credits)

DRAMA 465B (FORMERLY DRAMA 411A)
Scenography IIIc: Lighting and Sound.

Prerequisite: Drama 361B. Advanced work in the technology of theatrical lighting and sound plus theoretical and practical consideration of the aesthetics of light and sound in the theatre. Students will undertake positions of responsibility in lighting and sound for theatrical productions. (3 credits).

DRAMA 491Z
Puppetry.

Prerequisites: At least one full course in drama and second-year standing. The course offers a theoretical and historical study of puppet theatre in present and past cultures where this form of theatre has been conspicuously deceloped. It also includes a practical studio in the making and manipulation of puppets of most kinds. The class will prepare and perform plays. (6 credits)

DRAMA 501A
Production Workshop III

Prerequisites: Drama 451B. Majors only. Advanced operation of a theatre company. Students will assume major acting, technical or administrative roles in production. Continuation of Production Workshop I and II. Students assume greater responsibility for their fellows in the programme behind them. (3 credits)

DRAMA 523Z
Creative Drama I

The use of Drama in the classroom to help motivate effective learning and communication. Development of the powers of concentration, imagination, learning, problem solving, affective awareness and creativity. Review of the history of Drama in education. Offered in the evenings. Lecture: 4½ hours per week. (6 credits)

DRAMA 531A
Playwriting Workshop

Prerequisite: Enrollment by permission of the instructor. Study of existing methods of playwriting. Emphasis is on the creative work of the student guided by the criticism of the class and the instructor. Promising scripts may receive workshop production. (3 credits)

DRAMA 541A/B/Y
Directing

Prerequisite: Enrollment by permission of the Drama Section. Study of and exercices in visual, structural and conceptual analysis. Examination and experimentation in staging. Preparation of the prompt book. Direction of the one-act play. (3 credits)

DRAMA 551B
Production Workshop IV

Prerequisites: Drama 501A. Majors only. Advanced operation of the theatre company continued. (3 credits)

DRAMA 553B
(also given as French 553B § 51.12.3)
Art Dramatique

L'inscription est limitée. Ce cours, ou atelier pratique de théâtre, s'adresse aux étudiants qui veulent acquérir une connaissance pratique du théâtre, s'initier au phénomène de socialisation que cet art réalise. Ce "théâtre en action,, vise à sensibiliser aux exigences du texte dramatique et aux réalités de la scène. Au cours de l'année, les membres de ce cours monteront et interpréteront une pièce ou quelques actes du théâtre français et/ou québécois, ou des scènes, créées dans le cours. Étude pratique de quelques oeuvres susceptibles d'être représentées. Notions d'histoire du théâtre, de mise en scène, de formation du comédien, d'expression corporelle, de jeu scénique. Exercices de scénarisation de situations dramatiques, d'improvisation dramatique et de direction théâtrale. (3 credits)

DRAMA 561A/B/Y
Advanced Practical Studies

Prerequisite: Permission of the Drama Section. Special study in a selected area of Drama: acting, directing, playwriting, design, technical production. Responsibility for projects left to the student. (3 credits)

DRAMA 573Z
Creative Drama II

Prerequisite: Drama 521Z. Continuation of

Drama 521Z. Organization and development of Drama curriculum and theatre arts activities. Offered in the evenings. (6 credits)

DRAMA 581B
Children's Theatre

Theories of stage presentation for children. Study of scripts, performance techniques, special conditions and performer responsibilities. (3 credits)

DRAMA 591B
Seminar in Theatre

A study in depth of one phase of theatre, such as theory and history of acting, directing, or design; aspects of modern theatre pratice, theatre management, or theatre history. (3 credits)

81.11 Theatre Arts (BFA)
Sir George Williams Campus

81.11.1 PROGRAMMES

30	Minor in Theatre Arts
12	Theatre Arts N-212[6], N-255[6].
18	Theatre Arts N-247[6], N-312[6], N-315[6], N-331[6], N-340[6], N-355[6], N-413[6], N-421[6], N-431[6], N-455[6]

60	BFA Major in Theatre Arts
24	Theatre Arts N-212[6], N-247[6], N-255[6], N-421[6].
36	Theatre Arts N-312[6], N-315[6], N-331[6], N-340[6], N-355[6], N-413[6], N-431[6], N-455[6].

81.11.2 COURSE DESCRIPTIONS

THEATRE ARTS N-212 (212)
Stage Design I
An introductory course in the design of stage scenery. Lectures and studio periods. (6 credits)

THEATRE ARTS N-247 (247)
The History of the Theatre
Study of the development of theatrical production and the drama brings before the student the whole shifting scene of manners and customs, ideals and moral standards of the ages. This course traces the development of the theatre from the time of the modern talking-picture and legitimate stage, showing at each step how the culture of that age has been condensed and reflected in the vital and permanent art form of the theatre. (6 credits) *NOTE A/See § 200.3*

THEATRE ARTS N-255 (252)
The Arts of Play Production I
A study of the theories of the aesthetics of the theatre and their relationship to the arts contributing to production. Students will participate in a practical programme of one-act productions which will entail work in acting, staging, lighting and scenic design. Lectures, labs and rehearsals. (6 credits) *NOTE A/See § 200.3*

THEATRE ARTS N-312 (412)
Stage Design II
Prerequisite: Theatre Arts N-212. A seminar in the conception and expression of space, form and movement on the stage through visual knowledge and use of light. (6 credits)

THEATRE ARTS N-315 (215)
Costuming for the Theatre
An introductory course in costuming for the theatre. Emphasis on history and construction. Students will participate in costuming productions for the Theatre Arts Section. Lectures and labs. (6 credits)

THEATRE ARTS N-331 (231)
Creative Drama in the Schools I
Prerequisite: Theatre Arts N-255. Principles of creative drama for elementary, intermediate and high schools. Theories and practices of techniques and direction. Lectures and labs. (6 credits)

THEATRE ARTS N-340 (440)
Theatre Administration
Prerequisite: Second year standing. A course in theatre administration covering office and plant management, production, touring and prepackaged plant costing; contracts, insurances, budgeting and seasonal planning; lectures with actual case studies in depth. (6 credits)

THEATRE ARTS N-355 (455)
The Arts of Play Production II
Prerequisite: Theatre Arts N-255. A study of the theories of the aesthetics of the theatre and their relationship to the arts contributing to production. Students will participate in mounting major productions for the Theatre Arts Section which will entail work in acting, staging, lighting and scenic design. Lectures, labs and rehearsals. (6 credits) *NOTE A/See § 200.3*

THEATRE ARTS N-413 (413)
Special Theatre Arts Techniques
Prerequisites: Theatre Arts N-212 and N-255. A seminar for advanced theatre arts students in make-up, masks, sound and special effects; property-making with special emphasis on the usage of contemporary and found materials. This course will be divided into units covering the above subjects and will draw upon guest lecturers from the profession and industry. (6 credits)

THEATRE ARTS N-421 (421)
Voice and Speech
Prerequisite: Theatre Arts N-255. The theories and practices of communication for the theatre with emphasis on voice mechanics and production. Lectures and practice. (6 credits)

THEATRE ARTS N-431 (431)
Creative Drama in the Schools (Intermediate)
Prerequisite: Theatre Arts N-331. Discussions and demonstrations of theatre techniques of particular use in elementary, intermediate and high school drama. (6 credits)

THEATRE ARTS N-455 (456)
The Arts of Play Production III
Prerequisite: Theatre Arts N-355. A study of the advanced theories of the aesthetics of the theatre and their relationship to the arts contributing to production. Students will participate in a practical programme of productions which will entail work in acting, staging, voice production, pantomime, make-up, lighting and scenic design. Lectures and practice. (6 credits)

91 Sir George Williams Faculty of Science

91.1 Sir George Williams Faculty of Science

Dean
ROGER H. VERSCHINGEL

Associate Dean
FREDERICK BEDFORD

91.2 Admission Requirements

General Admission requirements are listed in § 13

Specific requirements are those contained in the CEGEP pre-science profiles. They are outlined in the following tables:

Department	Profile
Biological Sciences	2.2 or 1.4
Chemistry	2.2 or 1.4
Geology	2.24
Mathematics	2.3
Mathematics (BA)	2.12
Physics	2.3
Psychology (BSc)	3.9

Profile	Subjects
2.2 or 1.4	Math 103, 203 Phys 101, 201, 301 or 102, 202, 302 Chem 101, 201 Biol 301 or 921
2.3	Math 103, 105, 203 Phys 101, 201, 301 or 102, 202, 302 Chem 101, 201 Biol 301 or 921
2.12	Math 103, 105, 203
2.24	Math 103, 203 Phys 101, 201, 301 or 102, 202, 302 Chem 101, 201 Biol 301 or 921 or Geol 901
3.9	Math 103, 203 Biol 301 or 921 Psychology 101, 201

91.3 Degree Requirements

Students preparing for the degree of Bachelor of Science will take the minimum of 90 credits. Each credit represents a minimum of 45 hours spread across the total student activity including lectures, conferences, laboratories, studio or practice periods, examinations and personal work. Sixty (60) of these must be taken from the courses listed as courses offered in the Faculty of Science in the university calendar except where otherwise noted.

91.4 Programmes of Study

Students may choose to follow in their degree requirements various programmes of study. These programmes are classified as honours degrees, specialized degrees, degrees with a major, degrees with a minor, and certificates.

An **Honours** degree consists of a minimum of 60 specified credits and indicates an in depth specialization within a field of study and high academic standing. In order to qualify for an honours degree a student must meet all the academic qualifications and comply with the regulations set forth below:

1. A candidate for an honours degree should indicate such intention at registration, and consult the honours representative of the departments concerned as soon as possible. Honours standing will be reviewed annually. However, a student who has followed the courses prescribed for the honours programme, and has met all the requirements, may enter the programme with the approval of the department chairman at any time before beginning the final thirty credits. No retroactive approval of entry may be granted.

2. An honours student must meet the general degree requirements as well as the specific requirements for an honours degree, and must obtain at least a 'C' average over the total degree programme. Failure in any course will mean suspension from the honours programme. Reinstatement is possible only by recommendation of the honours representative.

3. An honours student must obtain a 'B' average with no grade lower than 'C' in all courses in the basic honours programme.

4. A student who enters with advanced standing may apply pro tanto credits which are applicable to the honours degree requirements, upon approval by the department.

5. A student shall be allowed to qualify for only one honours degree.

6. Honours standing in any programme is granted upon graduation only with the approval of the Senate.

A **Specialization** will consist of a minimum of 60 credits of an approved sequence of courses in a specific field. The term specialization, BSc, implies that a student

has followed, within the requirements for the degree, a planned programme of concentration in a given field of study. Note: With modifications, the above specialization represents what was previously called major.

A **Major** programme consists of a minimum of 36 credits of an approved sequence of courses in a specific or related field. Note: This programme differs from the old major which had a minimum of 42 credits and a maximum of 60 credits.

A **Minor** programme consists of a minimum of 24 credits and indicates a lower degree of concentration but indicates a complementation to a chosen field.

Students may choose to follow various combinations of these programmes within their degree requirements and are required to indicate on their application forms the choice of honours, specialization or major and any minor.

Certificate programmes are available for practising teachers. They are Certificates in Mathematics for Teachers at the Elementary School level and at the Junior Secondary School level.

The content of these programmes for each department can be found with the departmental listings on the following pages.

91.5 Faculty Advisors

Biological Sciences
P. D. ANDERSON
S. S. ASHTAKALA (Honours)
R. L. LOWTHER
F. MACLEOD
E. PREDDIE

Chemistry
T. ADLEY

Analytical Chemistry
J. G. DICK

Biochemistry
T. ADLEY

Geology
A. DELAND
H. deROMER

Mathematics
J. SENEZ
N. E. SMITH (Honours)

Applied Mathematics
J. SENEZ

Statistics
T. DWIVEDI

Mathematics Certificates
M. A. BOSWALL (Elementary)
MARY A. BRIAN (Junior High)

Physics
S. K. MISRA

91.6 Department of Biological Sciences

Associate Professor and Chairman of the Department
HILDEGARD E. ENESCO

Professor
DONALD L. PEETS

Associate Professors
S. S. ASHTAKALA
R. K. IBRAHIM
GÉRARD LEDUC
E. B. NEWMAN
C. F. MACLEOD

Assistant Professors
P. D. ANDERSON
J. A. KORNBLATT
RUTH L. LOWTHER
E. J. MALY
E. PREDDIE
ROBERT M. ROY
SYLVIA M. RUBY

91.6.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequence *must* be read in conjunction with § 91.3, 91.4.

NOTE: The superscript on a course number represents its credit value.

Biological Sciences: Honours

The following courses constitute an honours programme in Biological Sciences, provided the student maintains the required academic standing:

Year I
Biology N-202[3] (Students entering university with the CEGEP Biology 401 will be granted an exemption.)
Biology N-203[3], N-204[3], N-213[3], N-224[3]; Chemistry N-231[6].

Year II, III
Biology N-343[3], N-380[3], N-433[3], N-490[6].
One of: Chemistry N-371[6] or Botany N-422[6].
One of: Biology N-253[3] or Zoology N-212[3] or Biology N-360[3].
One of: Botany N-231[3] or Zoology N-215[3].
One of: Botany N-320[3] and Botany N-360[3] or Zoology N-320[6].

In addition, 24 or 27 credits from the field of Biological Sciences or related fields chosen in consultation with the Department of Biological Sciences. (The 27 credits are required of those students who have been exempted from Biology N-202[3].)

NOTE: Students who choose Chemistry N-371 as an elective are reminded that Chemistry N-231 and 12 credits from the Department of Biological Sciences are prerequisites.

Biological Sciences: Specialization

The following courses, in an approved sequence constitute a Specialization in Biological Sciences

Year I
Biology N-202[3] (Students entering university with the CEGEP Biology 401 will be granted an exemption.)
Biology N-203[3], N-204[3], N-213[3], N-224[3]; Chemistry N-231[6].

Year II, III
Biology N-343[3], N-380[3], N-433[3].
One of: Chemistry N-371[6] or Botany N-422[6].
One of: Biology N-253[3] or Zoology N-212[3] or Biology N-360[3].
One of: Botany N-231[3] or Zoology N-215[3].
One of: Botany N-320[3] and Botany N-360[3] or Zoology N-320[6].

In addition, 12 or 15 credits from the Department of Biological Sciences or in another related field chosen in consultation with the Department. (The 15 credits are required of those students who have been exempted from Biology N-202[3].)

NOTE: Students who choose Chemistry N-371 as an elective are reminded that Chemistry N-231 and 12 credits from the Department of Biological Sciences are prerequisites.

The following courses constitute the five major programmes available in the Department of Biological Sciences.

Biological Sciences: Major
Biology N-203[3], N-204[3], N-213[3], N-224[3], N343[3], Chemistry N-231[6].
One of: Botany N-231[3] or Zoology N-215[3],
One of: Biology N-253[3], Zoology N-212[3] or Biology N-360[3],
One of: Botany N-320[3] and N-360[3] or Zoology N-320[6].
One of: Biology N-380[3] or Biology N-433[3].

NOTE: Biology N-202[3] is also required if the equivalent course (Biology 401) has not been taken in CEGEP.

Botany: Major
Biology N-204[3], Botany N-210[3], N-231[3], N-320[3], N-360[3], Chemistry N-231[6] and fifteen credits chosen from among Biology N-213[3], N-254[3], N-343[3], N-373[3], N-380[3], Botany N-213[3], N-215[3], N-216[3], N-311[3], N-313[3], N-421[3], N-422[3].

Environmental Biology: Major
Biology N-203[3], N-204[3], N-213[3], N-380[3], Botany N-313[3], Interdisciplinary Studies N-221[3], Zoology N-313[3], and fifteen credits chosen from among Biology N-253[3], N-254[3], N-310[3], N-314[3], N-373[3], N-381[3], N-416[3], Botany N-210[3], N-216[3], N-421[3], Chemistry N-231[6], Zoology N-210[3].

Cell and Molecular Biology: Major
Biology N-224[3], N-343[3], N-433[3], Chemistry N-231[6], N-371[6], and fifteen credits chosen from among Biology N-253[3], N-360[3], N-380[3], N-434[3],

N-435[3], N-445[3], N-446[3], Chemistry N-471[6], N-472[6].
NOTE: Biology N-202 is also required if the equivalent course (Biology 401) has not been taken in CEGEP.

Zoology: Major
Biology N-203[3], Zoology N-212[3], N-215[3], N-320[3], Chemistry N-231[6], and fifteen credits chosen from among Biology N-213[3], N-343[3], N-372[3], N-373[3], Zoology N-213[3], N-214[3], N-313[3], N-331[3], N-332[3], N-361[3], N-422[3], Chemistry N-371[6].

The following courses constitute the six minor programmes available in the Department of Biological Sciences.

Biological Sciences: Minor
Biology N-203[3], N-204[3], N-213[3], N-224[3], N-343[3], Chemistry N-231[6], three credits chosen from among Biology N-253[3], N-360[3], N-380[3], N-433[3], Botany N-231[3], N-320[3],N-360[3], Zoology N-215[3], N-320[6].
NOTE: Biology N-202 is also required if the equivalent course (Biology 401) has not been taken in CEGEP.

Botany: Minor
Biology N-204[3], Botany N-210[3], N-231[3], N-320[3], N-360[3], Chemistry N-231[6], three credits chosen from among Biology N-213[3], N-254[3], N-343[3], N-380[3], Botany N-213[3], N-215[3], N-216[3], N-311[3], N-313[3], N-421[3], N-422[3].

Environmental Biology: Minor
Biology N-203[3], N-204[3], N-213[3], N-380[3], Botany N-313[3], Interdisciplinary Studies N-221[3], Zoology N-313[3] and three credits chosen from among Biology N-253[3], N-254[3], N-310[3], N-314[3], N-373[3], N-381[3], N-416[3], Botany N-310[3], N-316[3], N-421[3], Chemistry N-231[6], Zoology N-210[3].

Cell and Molecular Biology: Minor
Biology N-224[3], N-343[3], N-433[3], Chemistry N-231[6], N-371[6], and three credits from among Biology N-253[3], N-360[3], N-380[3], N-434[3], N-435[3], N-445[3], N-446[3], Chemistry N-471[6], N-472[6].
NOTE: Biology N-202 is also required if the equivalent course (Biology 401) has not been taken in CEGEP.

Zoology: Minor
Biology N-203[3], Chemistry N-231[6], Zoology N-212[3], N-215[3], N-320[3], and three credits chosen from among Biology N-213[3], N-343[3], N-372[3], N-373[3], Chemistry N-371[6], Zoology N-213[3], N-214[3], N-313[3], N-331[3], N-332[3], N-361[3], N-422[3].

Life Sciences: Minor
Biology N-203[3], N-204[3], N-213[3], N-241[6], Biology N-255[3] or Botany N-213[3], Interdisciplinary Studies N-221[3], N-222[3].

91.6.2 COURSE DESCRIPTIONS

The use of Note A after certain course descriptions indicates that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits.

BIOLOGY

BIOLOGY N-201 (251)
General Biology I
A survey of basic principles of Biology: chemical basis of life, cell organization and control; elements of anatomy, physiology, morphogenesis, heredity and evolution. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4. Science Students may not take this course for credits*

BIOLOGY N-202 (252)
General Biology II
Prerequisite: CEGEP Biology 301 or equivalent. Cell biology, elementary biochemistry, developmental biology, physiology and genetics. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-203 (253)
Animal Biology
Prerequisite: CEGEP Biology 301 or equivalent. A survey of the major evolutionary trends in the animal kingdom. The integration of systems in relation to animal life will be stressed. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-204 (254)
Plant Biology
Prerequisite: CEGEP Biology 301 or equivalent. A survey of the major evolutionary trends in the plant kingdom. The integration of structure and function in relation to plant growth and evolution will be stressed. Lectures and laboratory. (3 credits)

BIOLOGY N-213 (453)
Fundamentals of Ecology
Prerequisite: CEGEP Biology 301 or equivalent. An introduction to the basic principles of ecology dealing with the most important components of ecosystems. The course illustrates how environmental factors determine the distribution and abundance of plants and animals in various aquatic and terrestrial biomes of the world. Lectures only. (3 credits)

BIOLOGY N-224 (444)
Cell Physiology
Prerequisites: CEGEP Biology 401 or Biology N-202 and Chemistry N-231, previously or concurrently. A survey of the mechanisms involved in the normal function of single cells and subcellular components, particularly organelles as well as their responses to environmental stress. Lectures and laboratory. (3 credits)

BIOLOGY N-241 (241)
Genetics and Human Welfare
A course on the principles of heredity as understood by modern biology. It deals also with the application of genetic principles to organisms, including man. The biological basis of social problems is dealt with at some length. Organic evolution and its implications for human life and welfare are considered. Lectures only. (6 credits)
NOTE: No science credits will be given for Biology N-241, if it is taken concurrently with or following Biology N-343.

BIOLOGY N-253 (428)
Biology of Bacteria and Viruses
Prerequisite: CEGEP Biology 301 or equivalent. An introduction to theoretical and applied aspects. The physiology of bacteria and viruses as related to industrial, health, agricultural and ecological considerations is discussed. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-254 (429)
Biology of the Fungi
Prerequisite: CEGEP Biology 301 or equivalent. A study of selected species from representative groups including their occurrence, life-cycles and growth requirements. In lectures, stress is placed on their activities — in the cycling of elements in nature, in damage to agricultural crops and forests, in food spoilage, as human pathogens, as industrial agents, as research tools, and as sources of food and drugs. Laboratories are mostly descriptive using Canadian collections. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-255 (242)
Microorganisms and Man
Prerequisite: High School biology or equivalent. A public awareness course designed to supply basic information to non-biologists. Attempts to control continuing and recent problems due to microscopic forms as causal agents in human and plant diseases, spoilage of food, wood, petroleum products and water pollution. Their beneficial ac-

tivities in nature and their use in the production of drugs and foods are also considered. Lectures only. (3 credits) *NOTE: Science Students may not take this for science credits.*

BIOLOGY N-310
Field Ecology

Prerequisites: Biology N-213 and Botany N-210. Two weeks of field work in the summer session. Qualitative and quantitative studies of aquatic and terrestrial ecosystems. Students gain experience in techniques of field investigation. They will be expected to pay a minimum amount for their room and board. Field and laboratory work. (3 credits)

BIOLOGY N-314 (454)
Fundamentals of Limnology

Prerequisite: Biology N-213 previously or concurrently. An introduction to the study of freshwater ecosystems with major emphasis on geographical, physical and chemical characteristics. The major topics include the origin of lake basins, lake morphology and morphometry, wave and currents, the optical and thermal properties of lakes, dissolved chemicals. Some aspects of water pollution are considered. Lectures only. (3 credits)

BIOLOGY N-343 (445)
Genetics

Prerequisites: CEGEP Biology 401 or Biology N-202. A course to illustrate the fundamental principles of inheritance in plants, animals and microorganisms Mendelian genetics, gene linkage and mutation will be covered. The role of DNA as the hereditary material and genetic code will be studied in detail, as will the mechanisms of DNA, RNA and protein synthesis Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-344 (446)
Genetics of Higher Organisms

Prerequisite: Biology N-343. This course will cover various aspects of the genetics of multicellular and eukaryotic organisms, including cytogenetics, developmental, human, behavioural and population genetics, as well as somatic cell genetics. Lectures only. (3 credits) *NOTE A/See §200.4*

BIOLOGY N-360 (460)
Developmental Biology

Prerequisite: Second year standing in Biological Sciences. A study of the molecular aspects of development in animal and plant cells in relation to the acquisition of form. Lectures only. (3 credits)

BIOLOGY N-372 (481)
History of Biology

Prerequisites: Any 12 credits from the Department of Biological Sciences. A course following the growth of Biological Sciences. Lectures only. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-373 (484)
Evolution

Prerequisites: Any 12 credits from the Department of Biological Sciences. A course to examine the concepts leading from Darwin's Theory to a modern synthesis of evolution. Lectures only. (3 credits) *NOTE A/See § 200.4*

BIOLOGY N-380 (482)
Biostatistics I

Prerequisite: Second year standing. Application of statistical methods to biological data. Descriptive statistics. Binomial, Poisson and Normal distributions. Confidence limits. Tests of significance. Introduction to analysis of variance, correlation and regression. Analysis of frequencies. Lectures and laboratory. (3 credits)

BIOLOGY N-381 (483)
Biostatistics II

Prerequisite: Biology N-380. Sampling methods. Analysis of variance and experimental design. Regression and correlation techniques. Bioassay. Non-parametric statistics. Analytical methods in field biology/genetics and microbiology. Lectures and laboratory. (3 credits)

BIOLOGY N-416 (456)
Aquatic Ecology and Water Pollution

Prerequisite: Biology N-314. An inquiry into factors governing the distribution and abundance of aquatic organisms in lakes and streams, with emphasis on the nature and significance of the responses of aquatic organisms and communities through changes in water quality with pollution, on sources and types of pollutants and on methods of evaluating pollution and treating wastes. Lectures only. (3 credits)

BIOLOGY N-433 (443)
Cytology

Prerequisites: CEGEP Biology 401 or Biology N-202 and Chemistry N-231. Cell structure of both plants and animals, with special reference to genetics. Emphasis is on experimental, molecular and ultrastructure analysis, to achieve a correlation between cell structure and function. Lectures and laboratory. (3 credits)

BIOLOGY N-434 (434)
Radiation Biology and Radiotracer Methodology I

Prerequisites: Biology N-224 previously or concurrently, 2nd or 3rd year standing. A survey of the elements of radiation physics with emphasis on the properties of ionizing radiation and its interaction with matter including dosimetry and methods of radiation counting. The effects of radiation at the macromolecular, cellular and organismal level will be considered from both the somatic and genetic points of view. Lectures and laboratory. (3 credits)

BIOLOGY N-435 (435)
Radiation Biology and Radiotracer Methodology II

Prerequisite: Biology N-434. A detailed study of selected topics in chemical and solid state dosimetry, liquid scintillation counting, neuron irradiation techniques, cell kinetics, target theory, radiation botany and mammalian radiobiology. Laboratory will emphasize the use of a wide range of radioisotopes and radiation sources. A visit to a major radiation lab or reactor will be arranged. Lectures and laboratory. (3 credits)

BIOLOGY N-445 (447)
Biological Regulatory Mechanisms

Prerequisites: Biology N-343, Chemistry N-371 previously or concurrently, or permission of the instructor. Metabolic pathways with an emphasis on their control and coordination; intercellular messengers in developmental and adult systems. Lectures and conference. (3 credits)

BIOLOGY N-446 (448)
Molecular Genetics

Prerequisites: Biology N-343, Chemistry N-371 previously or concurrently or permission of the instructor. Basic microbial and molecular genetics including mechanisms in protein synthesis; bacteriophage recombination. Use of genetics in the study of regulation of gene expression, the code and mechanisms in protein synthesis; bacteriophage genetics; episomes. Lectures and conference. (3 credits)

BIOLOGY N-490 (491)
Special Study

Prerequisites: Third year standing and permission from the Chairman of the Department or his representative. In this course, the student undertakes a special research project to develop his knowledge of scientific procedures as used by biologists. The project may include only library research or both library and experimental research. (6 credits) *NOTE: This course is required of honours students in their final year. Other students may take this course with special permission of the department. All students planning to take this course must consult with the department of Biological Sciences in their U-2 year to obtain permission to enroll.*

BOTANY

BOTANY N-210 (430)
Eastern North American Flora

Prerequisite: Biology N-204, previously or concurrently. A study of higher plant life occurring in Eastern North America, including the recognition, collection, identification, classification and distribution. Field work for practical experience with the regional flora in various habitats. Lectures and laboratory. (3 credits)

BOTANY N-213 (421)
Economic Botany

Prerequisite: CEGEP Biology 301 or equivalent. Origin, development and use of selected economic plants including microorganisms. Their historical impact, prospects for future use and importance to Canadian economy are stressed as well as world-wide problems of food and alimentation. Lectures only. (3 credits)

BOTANY N-215 (434)
Biology of Mosses and Lichens

Prerequisite: Biology N-204 previously or concurrently. A survey of these organisms including distribution, classification, morphology and anatomy — information on nutrient cycling, use as indicators of air pollution and use as a research tool. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BOTANY N-216 (435)
Biology of Fresh Water and Marine Algae

Prerequisite: CEGEP Biology 301 or equivalent. A study of selected species from representative fresh-water and marine groups including their occurence, life-cycles and growth requirements. Topics include their involvement — in polluted and non-polluted water systems, in sewage treatment, as primary producers in food chains, in the formation of natural habitats, as special research subjects as well as their increasing economic importance in industry and as food supplements. Laboratories are mostly descriptive using Canadian collections. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BOTANY N-231 (410)
Plant Anatomy

Prerequisite: Biology N-204. A study of the internal structure of the plant as related to the processes of growth and metabolism. An experimental approach is presented to the study of the relationship between structure and function of various parts of the plant. Includes pathological, ecological and economic aspects of anatomy with emphasis on developmental anatomy. Laboratory work includes preparation of permanent slides using plant microtechnique. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BOTANY N-311
Plant Biosystematics

Prerequisite: Biology N-204. A study of modern systematics concerned with the application of experimental techniques in genetics, cytology, chemistry and statistics to the solution of questions relating to the classification of plants and their evolutionary sequences. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BOTANY N-313 (423)
Plant Ecology

Prerequisites: Biology N-204, N-213. Dynamic effects of physical and biotic factors on vegetation: succession, climax and influence of man. Elements of experimental ecology and field biology from the autecological to the phytogeographical level. Lectures only. (3 credits) *NOTE A/See §200.4*

BOTANY N-320 (431)
Plant Metabolism

Prerequisite: Chemistry N-231. A study of the physiological processes of higher plants related to nutrition and metabolism. Topics include: absorption and transport of water and mineral salts, mineral nutrition, photosynthesis, carbohydrate and nitrogen metabolism. Metabolic processes are discussed in relation to structure and environmental factors and some aspects of energy transformations and energy flow are included. Interrelations among the various metabolic processes are discussed. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

BOTANY N-360 (432)
Plant Growth

Prerequisite: Botany N-320 previously or concurrently. A physiological and biochemical study of growth regulators, their mechanism of action and their role in plant growth and metabolism. Lectures and laboratory. (3 credits)*NOTE A/See § 200.4*

BOTANY N-421
Physiology of Stress in Plants

Prerequisite: Botany N-320 or permission of the department. The physiological and molecular basis of plant response to various environmental stresses such as freezing, drought, soil toxicants, environmental pollutants and radiation effects are discussed. The study of the control of such stresses and of the injuries they produce, resistance, tolerance and aviodance mechanisms that exist are discussed. Response of crop plants and effects on crop quality and crop yields are stressed. Lectures only. (3 credits)

BOTANY N-422 (418)
Plant Biochemistry

Prerequisites: Biology N-204 and Chemistry N-231. Biochemical study of the common natural plant constituents including secondary metabolites, their biosynthesis and role in plant metabolism. Lectures and laboratory. (6 credits)

ZOOLOGY

ZOOLOGY N-212
Invertebrate Zoology

Prerequisite: Biology N-203 previously or concurrently. An introductory course to the structure and function of the invertebrate phyla. Emphasis will be placed on evolutionary aspects. Laboratory work will include physiological experiments with living organisms. Lectures and laboratory. (3 credits) *NOTE A/See §200.4*

ZOOLOGY N-213 (424)
Parasitology

Prerequisite: Biology N-203, previously or concurrently. A survey of the parasitic groups of invertebrates with special reference to the parasites of man. Lectures and laboratory. (3 credits)

ZOOLOGY N-214 (425)
Entomology

Prerequisite: Biology N-203, previously or concurrently. An introduction to the study of insects, their morphology, taxonomy, physiology and ecology. Lectures and laboratory. (3 credits)

ZOOLOGY N-215 (422)
Chordate Anatomy

Prerequisite: Biology N-203. A study of the anatomy and evolutionary development of the major organ systems of the chordates. In the laboratory the lamprey, the mudpuppy, the turtle and the cat will be dissected. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

ZOOLOGY N-313 (453)
Animal Ecology

Prerequisites: Biology N-203 and N-213. A study of the factors influencing animal populations, and regulation of animal numbers involving competition, predation and migrations. Lectures only. (3 credits) *NOTE A/See § 200.4*

ZOOLOGY N-320 (431)
Animal Physiology

Prerequisites: Biology N-203 and Chemistry N-231. A study of comparative animal physiology at the system level. Lectures and laboratory. (6 credits)

ZOOLOGY N-331 (473)
Comparative Vertebrate Histology I

Prerequisite: Biology N-203. A comparative study of the microscopic characteristics of cells, tissues and organs of the vertebrates. Lectures and laboratory. (3 credits) *NOTE A/See § 200.4*

ZOOLOGY N-332 (474)
Comparative Vertebrate Histology II

Prerequisite: Zoology N-331. An advanced comparative study of the vertebrate organ systems at the ultrastructural and histological level. Those registered will be expected to participate in a seminar. Lectures and laboratory. (3 credits) *NOTE A/See §200.4*

ZOOLOGY N-361 (462)
Vertebrate Embryology

Prerequisite: Zoology N-215 previously or concurrently. The fundamental processes of growth and development in the vertebrates. A comparative study is made of selected vertebrate species with emphasis on the experimental and molecular aspects. Lectures and laboratory. (3 credits)

ZOOLOGY N-422 (432)
Advanced Animal Physiology

Prerequisites: Zoology N-320,. Lectures and seminars dealing with selected topics in physiology, emphasizing a molecular and experimental approach. Lectures only. (3 credits) *NOTE A/See § 200.4*

These courses were given in the Summer of 1974

BIOLOGY N-350
Introduction to Immunology
(6 credits)

BIOLOGY N-365
Marine Invertebrate Development
(6 credits)

91.7 Department of Chemistry

Associate Professor and Chairman of the Department
RODERICK E. TOWNSHEND

Professor and Dean of Science
ROGER H. C. VERSCHINGEL

Professors
LAWRENCE D. COLEBROOK
JAMES G. DICK
JOHN RUSSELL UFFORD

Associate Professors
THOMAS J. ADLEY
PETER H. BIRD
ZACHARIAS HAMLET
JACQUES LENOIR
ROBIN T. B. RYE
NICK SERPONE
OSWALD S. TEE
RONALD A. WESTBURY

91.7.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequence *must* be read in conjunction with §91.3, 91.4

NOTE: The Corporation of Professional Chemists of Quebec has fully accredited the curriculum of Honours in Chemistry. Upon satisfactory completion of an Honours programme a graduate is eligible for membership in the Corporation. The superscript on a course number represents its credit value.

Chemistry: Honours

The following courses constitute an honours programme in Chemistry, provided the student maintains the required academic standing:

Year I
Chemistry N-211[4], N-213[2], N-221[6] (or N-222[3] and N-223[3]), N-231[6], N-241[6] Mathematics N-270[6]

Year II
Chemistry N-311[3] (or N-411[3]), N-321[6] (or N-322[3] and N-323[3]), N-331[6], N-341[6] (or N-342[3] and N-343[3]), N-353[6].

Year III
Chemistry N-431[6], N-441[6] (or N-442[3] and N-443[3]), N-445[3], N-451[6] (or N-452[3] and N-453[3]), N-461[6], N-491[6].

NOTE: Students who have passed CEGEP Chemistry 301 may replace Chemistry N-231[6] with N-233[3].

NOTE: The Corporation of Professional Chemists of Quebec has fully accredited the curricula of specialization in Chemistry, Biochemistry and Analytical Chemistry. Upon satisfactory completion of a specialized programme a graduate is eligible for membership in the Corporation.

Analytical Chemistry: Specialization

The following courses, in an approved sequence, constitute a Specialization in Analytical Chemistry:

Year I
Chemistry N-211[4], N-213[2], N-221[6], N-231[6], N-241[6], Computer Science N-211[3] and N-221[3].

Year II
Chemistry N-311[3](or N-411[3]) N-323[3], N-331[6], N-342[3] and N-343[3]). N-353[6], Computer Science N-310[3].

Year III
Chemistry N-452[3], N-411[3], N-419[6].

NOTE: Students who have passed CEGEP Chemistry 301 may replace Chemistry N-231 with N-233. Students who specialize in Analytical Chemistry are exempted from the corequisite Computer Science N-220 for N-310.

Biochemistry: Specialization

The following courses, in an approved sequence, constitute a Specialization in Biochemistry:

Year I
Chemistry N-211[4], N-213[2], N-231[6], N-241[6].
Six credits in Biological Sciences (in consultation with the Department)

Year II
Chemistry N-331[6], N-341[6] (or N-342[3] and N-343[3]), N-351[6], N-371[6]
Six credits in Biological Sciences (in consultation with the Department).

Year III
Chemistry N-471[6] or N-472[6]
Physics N-480[4] six credits in Chemistry, six credits in Biological Sciences, Biophysics or Psychology (in consultation with the Department)

NOTE: Students who have passed CEGEP Chemistry 301 may replace Chemistry N-231 with N-233

Chemistry: Specialization

The following courses, in an approved sequence, constitute a Specialization in Chemistry.

Year I
Chemistry N-211[4], N-213[2], N-221[6] (or N-222[3] and N-223[3]), N-231[6], N-241[6]

Year II
Chemistry N-311[3] (or N-411[3]), N-331[6], N-341[6] (or N-342[3] and N-343[3]), N-353[6]

Year III
Chemistry N-323[3], N-445[3], six N-400-level Chemistry credits, three credits in Chemistry or in a related field with Departmental approval.

NOTE: Students who choose Chemistry N-461 are reminded that Mathematics N-270 is a prerequisite. Students who have passed CEGEP Chemistry 301 may replace Chemistry N-231 with N-233.

Chemistry: Major

The following courses, in an approved sequence, constitute a major in Chemistry: Chemistry N-211[4], N-213[2], N-221[6], N-231[6], N-241[6], twelve credits selected from Chemistry N-311[3], N-331[6], N-341[6], N-353[6], N-323[3] (Other courses may be selected in consultation with the Departmental student advisor).

Chemistry: Minor

The following courses in an approved sequence constitute a minor in Chemistry: Chemistry N-211[4], N-213[2], N-221[6], N-231[6], N-241[6]

Biochemistry: Minor

The following courses in an approved sequence constitute a minor in Biochemistry: Chemistry N-231[6], N-371[6], N-471[6], N-351[6]

Chemistry: Other Minors

Other combinations may be arranged with the Departmental student advisor.

91.7.2 COURSE DESCRIPTIONS

The use of Note A after certain course descriptions indicates that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits

CHEMISTRY N-201
General Chemistry I

States of matter. Atoms, elements and isotopes; atomic structures. The electronic structure of atoms. The Periodic Table and chemical bonding. Ions in solution. Lectures, tutorials and laboratories. (3 credits)
NOTE A/See § 200.4. Science Students may not take this course or credits.

CHEMISTRY N-202
General Chemistry II

Covalent compounds. Chemical reactions; mechanism and kinetics. Special topics: oriented either to the biological sciences, biochemistry and chemistry, or to the physical sciences, engineering and computer sciences. Lectures, tutorials and laboratories. (3 credits)*NOTE A/See § 200.4. Science Students may not take this course for credits.*

CHEMISTRY N-211 (412)
Introductory Quantitative Analysis

Prerequisites: CEGEP Chemistry 201; CEGEP Physics 301; CEGEP Mathematics 103 and 203; or equivalent courses. Chemical equilibrium as applied to volumetric and gravimetric procedures; general theory of volumetric titrations; titration curves; application of general titration theory to neutralization precipitation, complexation, oxidation-reduction and non-aqueous solvent titrations; theory of potentiometry and potentiometric titrations; theory of gravimetric analysis; methods of separation by chemical and physical means; electrogravimetry and electrolytic separations; absorptimetric theory and absorptimetric methods of analysis. Lectures and laboratory. Textbook: Dick: *Analytical Chemistry* (McGraw-Hill). (4 credits)

CHEMISTRY N-213 (413)
Statistical Treatment of Chemical Data

Prerequisites: CEGEP Chemistry 201; CEGEP Physics 301; CEGEP Mathematics 103 and 203; or equivalent courses. The statistical treatment of chemical data including: observations and measurements; error and accuracy; significant figures, expression of results; probability theory, normal and Poisson error distributions; precision; measures of spread; propagation of errors; rejection of observations; statistical analysis; graphical analysis; straight line law; nonlinear laws; method of least squares; accuracy of values derived from graphs; literature data, primary and secondary sources; use of chemical literature indices. Lectures only. (2 credits)

CHEMISTRY N-221 (411)
Introductory Inorganic Chemistry

Prerequisites: CEGEP Chemistry 201; CEGEP Physics 301; CEGEP Mathematics 103 and 203; or equivalent courses. Introduction to structural and descriptive chemistry of the main-group elements including: the chemical properties of atoms, properties of ionic compounds, bonding in covalent compounds, solutions. A group by group treatment of the descriptive chemistry of the non-transition elements. Lectures and laboratory. Textbook: Mackay and Mackay: *Introduction to Modern Inorganic Chemistry* (Intertext) (6 credits)

CHEMISTRY N-222
Introduction to Inorganic Chemistry

Prerequisites: CEGEP Chemistry 201; CEGEP Physics 301; CEGEP Mathematics 103 and 203; or equivalent courses. Atomic structure and electronic structure of the atom; Ionic Bonding — lattice energy, size effects; Covalent Bonding — V.B. and M.O. Theory, hybridization, multiple bonding; Chemical Forces — types and effects of chemical forces; Radii; Acid-Base concepts — definitions, soft and hard acids and bases. Lectures and laboratory. Textbook: Huheey: *Inorganic Chemistry — Principles of Structure and Reactivity* (Harper and Row) or Lagowski: *Modern Inorganic Chemistry* (Dekker) Laboratory Manual: TBA. (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-223
Chemistry of Main Group Elements

Prerequisites: CEGEP Chemistry 201, Physics 301, Mathematics 103 and 203; or equivalent courses. Structural and descriptive chemistry of main group elements and their compounds — Hydrogen, alkali and alkaline earth metals — groups III, IV, V, and VI representative elements — halogens — rare gases. Lectures and laboratory. Textbook: Cotton and Wilkinson: *Advanced Inorganic Chemistry* (Wiley, 3rd ed) or Lagowski: *Modern Inorganic Chemistry* (Dekker) Laboratory Manual: TBA. (3 credits)*NOTE A:/See § 200.4*

CHEMISTRY N-231 (421)
Introductory Organic Chemistry

Prerequisite: CEGEP Chemistry 201 or an equivalent course. Chemistry of aliphatic and aromatic compounds; structural isomerism; stereoisomerism; mechanisms; electronic theories and stereochemistry of organic reactions; applications of spectroscopy to organic chemistry. Lectures and laboratory. Textbook: Allinger, Cava, De Jongh, Johnson, Lebel and Stevens: *Organic Chemistry* (Worth Publishers) (6 credits)

CHEMISTRY N-233 (423)
Introductory Organic Chemistry

Prerequisites: One semester of organic chemistry at CEGEP level (CEGEP Chemistry 301). Reactions and syntheses of aliphatic and aromatic compounds. Mechanisms and electronic theories of organic reactions. Application of spectroscopy to organic chemistry. Lectures and laboratory. Textbook: Allinger, Cava, DeJongh, Johnson, Lebel, and Stevens: *Organic Chemistry* (Worth Publishers) (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-241 (431)
Introductory Physical Chemistry

Prerequisites: CEGEP Chemistry 201; CEGEP Physics 301; CEGEP Mathematics 103 and 203; or equivalent courses. Real gases; kinetic molecular theory; equilibrium thermodynamics (first, second and third laws); electrochemical cells and the Nernst equation; applications of thermodynamics to one-component, two-component and three-component systems; chemical kinetics; ions in solution. Lectures only. Textbook: Daniels and Alberty: *Physical Chemistry* (Wiley 3rd edition) (6 credits)

CHEMISTRY N-281 (461)
Industrial Inorganic Chemistry

Prerequisite: CEGEP Chemistry 201 or an equivalent course. Study of selected industrial inorganic processes. This course is not applicable towards a major in Chemistry. Lectures only. Textbook: Shreve: *Chemical Process Industries* (McGraw-Hill, 3rd edition) (3 credits)

CHEMISTRY N-301 (401)
Chemical Pedagogy

Prerequisite: CEGEP Chemistry 201 or an equivalent course; one full laboratory course at university level. The methodology of teaching chemistry at various levels including: the objectives of chemical education; the presentation of chemical concepts; the communication skills; the mathematical skills; the editing of a course and its lectures; the philosophy of laboratory procedure; the examination; the textbook; planning and budgeting; visual aids. Lectures only. (6 credits)

CHEMISTRY N-311 (417)
Electrochemical Methods of Analysis

Prerequisites: Chemistry N-211, N-213, N-221; Chemistry N-353 or N-351 previously or concurrently. Coulometric theory; instrumentation; coulometry at controlled potential; coulometry at constant current; coulometric titrations. Review and extension of potentiometric theory covered in Chemistry N-211 (412); derivative titrations; two indicating electrode titrations; polarized titrations; automatic titrators. The theory of voltammetric and polarographic methods; the Ilkovic equations; rotating platinum electrode; instrumentation; application to qualitative and quantitative analysis; reversible and irreversible electrode reactions; kinetic and catalytic processes; amperometric titrations; chronopotentiometry and chronoamperometry; determination of reaction characteristics such as electron transfer, coordination number, rate constant, etc. Conductance theory and measurement; instrumentation; conductometric titrations by standard and high frequency methods. Lectures and laboratory. Textbook: Dick; *Analytical Chemistry* (McGraw-Hill) (3 credits)

CHEMISTRY N-321 (415)
Advanced Inorganic Chemistry

Prerequisites: Chemistry N-211, N-221; Chemistry N-353 previously or concurrently. Introduction to symmetry and group theory and their application to chemical systems. Coordination chemistry: structure, theory of bonding, reactivity of transition metal complexes of various coordination numbers. Descriptive chemistry of transition metals of various oxidation states. Organometallic chemistry. Inorganic chemistry in biological systems. Lectures and laboratory. Textbooks: Cotton; *Chemical Applications of Group Theory* (Interscience, 2nd edition) Huheey; *Inorganic Chemistry — Principles of Structure and Reactivity* (Harper and Row) Angelici: *Synthesis and Techniques in Inorganic Chemistry* (Saunders) (6 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-322 (418)
Introduction to Symmetry and Group Theory

Prerequisites: Chemistry N-211, N-221 or N-222 and N-223; Chemistry N-353 previously or concurrently. Symmetry elements and symmetry operations; point groups; character tables; applications of group theory to Valence Bond, Crystal Field, and Molecular Orbital theory of bonding; applications to electronic spectroscopy and molecular vibrations. Lectures and laboratory Textbooks: Cotton: *Chemical Applications of Group Theory* (Interscience, 2nd ed) Angelici: *Synthesis and Techniques in Inorganic Chemistry* (Saunders). (3 credits) *NOTE: A:/See § 200.4*

CHEMISTRY N-323 (419)
Chemistry of the Transitional Elements

Chemistry N-353 previously or concurrently. Coordination chemistry: structure, theory of bonding, reactivity of transition metal complexes of various coordination numbers. Descriptive chemistry of transition metals of various oxidation states. Organometallic chemistry. Inorganic chemistry in biological systems. Lectures and laboratory Textbooks: Huheey: *Inorganic Chemistry - Principles of Structure and Reactivity* (Harper and Row) Angelici: *Synthesis and Techniques in Inorganic Chemistry* (Saunders) Reference Text: Cotton and Wilkinson: *Advanced Inorganic Chemistry* (Wiley, 3rd ed) (3 credits) *NOTE: A:/See § 200.4*

CHEMISTRY N-331 (427)
Intermediate Organic Chemistry

Prerequisites: Chemistry N-231, N-241; Chemistry N-353 previously or concurrently. Amplification of concepts presented in introductory organic chemistry; reaction mechanisms; catalysis; conformational analysis and stereochemistry. Laboratory includes qualitative analysis of compounds and mixtures by spectroscopic techniques; small scale preparations; selected experiments in physical organic chemistry. Lectures and laboratory. Textbook: *To be announced* (6 credits)

CHEMISTRY N-336 (471)
Natural Products I

Prerequisite: Chemistry N-231. Structures, stereochemistry and reactions of carbohydrates; synthesis, stereochemistry and physiochemical properties of amino-acids; determination of amino-acid sequences; synthetic methods; conformations of polypeptides and proteins. Lectures only. Textbooks: Guthrie and Honeyman: *Introduction to the Chemistry of Carbohydrates* (Oxford, 3rd edition). Kopple: *Peptides and Amino Acids* (Benjamin (3 credits)

CHEMISTRY N-337 (473)
Natural Products II

Prerequisite: Chemistry N-231. The synthesis, stereochemistry and structure determination of lipids (triglycerides, phospholipids, sphingolipids and sterols); steroid hormones; antibiotics; nucleotides. Lectures only. Textbooks: Ulbricht: *Purines, Pyrimidines and Nucleotides and the Chemistry of Nucleic Acids* (Pergamon); Yates: *Structure Determination* (Benjamin) (3 credits)

CHEMISTRY N-338 (472)
Chemistry of High Polymers I

Prerequisites: Chemistry N-231, N-241. Methods and mechanisms of polymer preparation; condensation polymerization; addition polymerization; ring opening reactions; vinyl and diene polymers; polyesters; polyamides; polythioethers; properties of polymers and their related monomers. Lectures only. Textbook: Lenz: *Organic Chemistry of Synthetic High Polymers* (Wiley) (3 credits)

CHEMISTRY N-341 (432)
Intermediate Physical Chemistry

Prerequisite: Chemistry N-241. Topics in chemical kinetics and thermodynamics including mechanisms of elementary processes; reactions in the gas-phase and in solution; the Rice-Ramsperger-Kassel, and Slater theoretical treatments; Rice-Herzfeld mechanisms; applications of the foregoing treatments to selected systems; introduction to modern techniques for the study of very fast reactions; mathematical treatment of mixtures of real gases; partial molar properties; fugacities and activities; determination of activities of non-electrolytes and electrolytes. Lectures and laboratory. Textbooks: Laidler: *Chemical Kinetics* (McGraw-Hill, 2nd edition) Daniels, et al: *Experimental Physical Chemistry* (McGraw-Hill, 7th edition) Denbigh: *Principles of Chemical Equilibrium* (C.U.P. 3rd edition) (6 credits)

CHEMISTRY N-342 (436)
Chemical Kinetics

Prerequisite: Chemistry N-241. Topics in chemical kinetics and thermodynamics including mechanisms of elementary processes; reactions in the gas-phase and in solution; the Rice-Ramsperger-Kassel, and Slater theoretical treatments;

Rice-Herzfeld mechanisms; applications of the foregoing treatments to selected systems; introduction to modern techniques for the study of very fast reactions. Lectures and Laboratory. Textbooks: Laidler: *Chemical Kinetics* (McGraw-Hill, 2nd edition) Daniels, et al: *Experimental Physical Chemistry* (McGraw-Hill, 7th edition) (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-343 (437)
Intermediate Thermodynamics

Prerequisite: Chemistry N-241. Mathematical treatment of mixtures of real gases; partial molar properties; fugacities and activities; determination of activities of nonelectrolytes and electrolytes. Lectures and laboratory. Textbooks: Denbigh: *Principles of Chemical Equilibrium* (C.U.P. 3rd edition) Daniels, et al: *Experimental Physical Chemistry (McGraw-Hill. 7th edition) (3 credits) NOTE A:/See § 200.4*

CHEMISTRY N-346 (474)
Chemistry of High Polymers II

Prerequisites: Chemistry N-231, N-241. Study of the physical chemistry of high polymers including: examination of the physical properties of polymers; methods for studying polymers; polymer solution theory; molecular weight distributions and fractionation; molecular weight determinations by colligative properties, light scattering and ultracentrifuge techniques; mechanisms and kinetics of condensation and addition, polymerization; free radical and ionic polymerization. Lectures only. Textbook: Billmeyer: *Textbook of Polymer Science* (Interscience: 2nd edition) (3 credits)

CHEMISTRY N-350
Introductory Chemical Instrumentation

Prerequisites: Chemistry N-211, N-231 N-241. Basic principles and applications of UV, IR, Raman fluorescence, phosphorescence, NMR, and EPR spectroscopy and mass spectrometry to Chemistry and Biochemistry. Lectures and laboratory. Textbooks: *To be announced* (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-351 (440)
Theory and Practice of Biochemical Techniques

Prerequisites: Chemistry N-211, N-231, N-241; chemistry N-371 previously or concurrently. Basic principles and applications of UV, IR, Raman, fluorescence, phosphorescence, NMR and EPR spectroscopy and mass spectrometry to chemistry and biochemistry; basic principles and applications of gas chromatography, column chromatography, thin layer chromatography, gel filtration and electrophoresis; introduction to optical rotatory dispersion. Lectures and laboratory. Textbook: To be announced (6 credits)

CHEMISTRY N-352 (449)
Practice of Biochemical Techniques

Prerequisite: Chemistry N-353. Basic principles and applications of gas chromatography, column chromatography, thin-layer chromatography, gel filtration and electrophoresis; introduction to optical rotatory dispersion. Lectures and laboratory. (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-353 (490)
Introductory Chemical Instrumentation

Prerequisites: Chemistry N-211, N-231, N-241. Basic principles and applications of UV, IR, Raman fluorescence, phosphorescence, NMR, and EPR spectroscopy and mass spectrometry to chemistry and biochemistry; basic principles of electricity and electronics; analysis of operational amplifier, servorecorder, Ph meter, polarograph, logic and data acquisition circuits. Lectures and laboratory. Textbooks: Malmstadt and Enke: *Digital Electronics for Scientists* (Benjamin) (6 cedits)

CHEMISTRY N-354 (499)
Introductory Instrumentation

Prerequisite: Chemistry N-351. Basic principles of electricity and electronics; analysis of operational amplifier, servorecorder, Ph meter, polarograph, logic and data acquisition circuits. Lectures and laboratory. Textbook: Malmstadt and Enke: *Digital Electronics for Scientists* (Benjamin) (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-371 (441)
General Biochemistry

Prerequisites: Chemistry N-231 and 6 credits in Biological Sciences at the university level, Chemistry students must have, in addition, Chemistry N-211 and N-241. Biological Science students must have, in addition, 6 credits in Biological Sciences at the university level. Comparative and functional approach to the chemical activities of living organisms; basic metabolic patterns involved in life processes; introduction to bioenergetics and specialized functions of cells and organs; biochemical relationship to environment and its changes. Lectures and laboratory. Textbook: Leninger; *Biochemistry* (Worth) (6 credits)

CHEMISTRY N-380
General Industrial Chemistry

Prerequisite: Second year chemistry students or permission of the Department. Broad outline of major factors to be considered by the chemical industry when contemplating manufacture of a new product or product group, with special emphasis on market determination; customs; tariffs; use of Statistics Canada data; existing or potential competition; inherent advantages or disadvantages; relative importance of labour versus capital; plant location; transportation considerations; by-product disposition; hazard and pollution considerations; government regulated products; government incentives; marketing channels; export considerations; foreign tariffs and non-tariff barriers. Lectures only. (3 credits)

CHEMISTRY N-382 (462)
Industrial Organic Chemistry I

Prerequisite: Chemistry N-231. Study of selected industrial organic processes. This course is not applicable towards a Specialization in Chemistry. Lectures only. Textbook: Shreve: *Chemical Process Industries* (McGraw-Hill. 3rd edition) (3 credits)

CHEMISTRY N-383 (463)
Industrial Organic Chemistry II

Prerequisite: Chemistry N-231. Study of additional organic processes not covered in Chemistry N-382. This course is not applicable towards a Specialization in Chemistry. Lectures only. Textbook: Shreve: *Chemical Process Industries* (McGraw-Hill, 3rd edition) (3 credits)

CHEMISTRY N-411
Optical Methods of Analysis

Prerequisites: Chemistry N-211, N-213, N-221; Chemistry N-353 or N-351 previously or concurrently. Review and extension of absorptimetric theory covered in Chemistry N-211 (412); instrumentation; absorptimetric titrations. The principles of light scattering as applied to nephelometry and turbidimetry; the principles of fluorescence and phosphorescence; instrumentation; the application of nephelometry, turbidimetry and fluorometry in quantitative analysis. The principles of emission spectroscopy; prism and grating instrumentation; sources of excitation; photographic and photoelectric recording of spectra; applications to qualitative and quantitative analysis. The principles of flame absorption and emission; atomic absorption spectrometry; flame photometry; instrumentation; applications in quantitative analysis. The principles of x-ray emission and absorption; quantitative analysis by x-ray absorption methods; x-ray diffraction methods; x-ray emission (fluorescence); instrumentation; qualitative and quantitative analysis by x-ray emission (fluorescence) methods; matrix effects in x-ray emission (fluorescence) methods; x-ray microprobe analysis. Lectures and laboratory. (3 credits) Textbook: *To be announced.*

CHEMISTRY N-419
Analytical Chemistry

Research Project and Thesis. Prerequisite: The student must be enrolled in the Major in Analytical Chemistry program. The student will work on a research project involving a theoretical and/or practical aspect of analytical chemistry, and will write a thesis on the results. The research project will be approved by a committee of members of the Department. (6 credits)

CHEMISTRY N-422
Selected Topics in Inorganic Chemistry

Prerequisites: Chemistry N-323 or N-321; or equivalent courses. Selected topics in the field of Inorganic Chemistry, particular topics may include: Kinetics and Mechanisms of Inorganic Reactions; Organometallic chemistry; Electronic Spectroscopy of Transition Metal complexes; Introduction to Crystallography; Inorganic Photochemistry; other current topics from the literature. Lectures only. Textbooks: *To be announced* (3 credits)

CHEMISTRY N-431 (428)
Advanced Organic Chemistry

Prerequisites: Chemistry N-331, N-341, N-353. Advanced stereochemistry, atropisomerism, physical organic chemistry, chemistry of natural products, photochemistry. Laboratory includes experiments in physical organic chemistry, synthetic and instrumental Methods. Lectures and laboratory. Textbooks: *To be announced.* (6 credits)

CHEMISTRY N-441 (433)
Advanced Physical Chemistry

Prerequisite: Chemistry N-341. Advanced topics in thermodynamics, including equilibrium, non-equilibrium and statistical approaches to selected systems; methods of determination of activities; the free-energy function and its applications; thermodynamics of solids; estimation of thermodynamic properties; de Donder's concepts; fused salts; high-temperature thermodynamics; elements of probability theory; microcanonical, canonical and grand canonical ensembles; the Boltzmann distribution; quantum mechanical treatment of an ideal gas; Fermi-Dirac and Bose-Einstein statistics; Einstein and Debye models of a monoatomic crystal; conformation of polymer chains. Lectures only. Textbook: Andrews: *Equilibrium Statistical Mechanics* (Wiley) (6 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-442 (434)
Statistical Thermodynamics

Prerequisite: Chemistry N-341. Elements of probability theory; microcanonical, canonical and grand canonical ensembles; the Boltzmann distribution; quantum mechanical treatment of an ideal gas; Fermi-Dirac and Bose-Einstein statistics; Einstein and Debye models of a monoatomic crystal: conformation of polymer chains. Lectures only Textbook: Andrews: *Equilibrium Statistical Mechanics* (Wiley) (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-443 (435)
Advanced Thermodynamics

Prerequisite: Chemistry N-341. Advanced topics in classical thermodynamics, comprising equilibrium and non-equilibrium approaches to selected systems. Methods of determination of activities; the free-energy function and its applications; thermodynamics of solids; estimation of thermodynamic properties; de Donder's concepts; fused salts; high temperature thermodynamics. Lectures only. (3 credits) *NOTE: A:/See § 200.4*

CHEMISTRY N-445
Advanced Physical Chemistry Laboratory

Prerequisites: Chemistry N-341 (or N-342 and N-343). Advanced experimentation in chemical kinetics and thermodynamics with complete laboratory reports. Laboratory only. (3 credits)

CHEMISTRY N-451 (491)
Advanced Chemical Instrumentation

Prerequisites: Chemistry N-311, N-331, N-341, N-353. Rotational and rotational-vibrational spectroscopy of linear, symmetrical top and asymmetrical molecules; vibrational spectroscopy, molecular symmetry and group theory; Raman spectroscopy; Fourier transform spectroscopy; electron spin spectroscopy; digital electronics in control equipment, integration, signal averaging A to D and D to A conversion and data acquisition. Lectures and laboratory. Textbooks: Malmstadt and Enke: *Digital Electronics for Scientists* (Benjamin); Brittain, George and Wells: *Introduction to Molecular Spectroscopy* (Academic Press) (6 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-452 (492)
Chemical Spectroscopy

Prerequisites: Chemistry N-311, N-331, N-341, N-353. Rotational and rotational-vibrational spectroscopy of linear, symmetrical top and asymmetrical molecules; vibrational spectroscopy; molecular symmetry and group theory; Raman spectroscopy; Fourier transform spectroscopy; electron spin spectroscopy. Lectures and laboratory. Textbook: Brittain, George and Wells: *Introduction to Molecular Spectroscopy* (Academic Press (3 credits) *NOTE A:/See § 200.4*

CHEMISTRY N-453 (493)
Advanced Analytical Instrumentation

Prerequisites: Chemistry N-311, N-331, N-341, N-353. Digital electronics in control equipment; integration, signal averaging A to D and D to A conversion and data acquisition. Lectures and laboratory. Textbook: Malmstadt and Enke: *Digital Electronics for Scientists* (Benjamin). (3 credits) *NOTE A/See § 200.4*

CHEMISTRY N-461 (416)
Theoretical Chemistry

Prerequisites: Chemistry N-221, N-331, N-341; Mathematics N-270. Introduction to quantum theory; vibrational and rotational spectroscopy; structure of atoms and molecules; molecular orbital theory; valence bond theory; structure of metals, organo-metallic and coordination compounds; atomic and molecular spectroscopy; ligand field theory. Lectures only. Textbook: La Paglia: *Introductory Quantum Chemistry* (Harper and Row) (6 credits)

CHEMISTRY N-471 (443)
Advanced Biochemistry I

Prerequisites: Chemistry N-351, N-371. Selected topics from the general area of physical biochemistry; ultracentrifugation and its applications; biopolymer size and shape, energetics of catabolism and anabolism; comparative biochemistry; chemistry of the central nervous system; protein and enzyme chemistry; metabolic pathways. Lectures and laboratory. (6 credits)

CHEMISTRY N-472 (444)
Advanced Biochemistry II

Prerequisites: Chemistry N-351, N-371. Selected topics from the general areas of structural biochemistry; biosynthetic pathways; lipids; carbohydrates; nucleic acids. Lectures and laboratory. (6 credits)

CHEMISTRY N-481
Industrial Synthetic Chemistry

Prerequisites: Chemistry N-331, N-353 or equivalents. Selected fields of study in the industrial synthesis of fine chemicals, pharmaceutical intermediates, dyestuffs, pigments, agricultural chemicals and others. Group assignments will involve the up-scaling of laboratory synthesis to batch levels; evaluation of needs; search of patent literature, toxicology, pollution and other related industrial legislation. Lectures and laboratory. (3 credits)

CHEMISTRY N-491 (450)
Research Project and Thesis

Prerequisite: Permission of the Department.

The student will work on a research project under the direction of a staff member, and will write a thesis on the results. (6 credits) *NOTE: Students planning to take this course must consult with the Chemistry Department as early as possible the year before the final year.*

91.8 Computer Science

The courses in Computer Science listed below are acceptable as science credits in the Bachelor of Science degree. Course descriptions can be found in the Faculty of Engineering §71.

COMPUTER SCIENCE N-211 (3 credits)
Introduction to Computers and Computing

COMPUTER SCIENCE N-220 (3 credits)
Introduction to Discrete Structures

COMPUTER SCIENCE N-221 (3 credits)
Introduction to Assembly Language Programming

COMPUTER SCIENCE N-223 (3 credits)
Computer Languages

COMPUTER SCIENCE N-301 (3 credits)
Computer Organization

COMPUTER SCIENCE N-302 (3 credits)
Computer Operating Systems

COMPUTER SCIENCE N-303 (3 credits)
Programming Languages and Compiler Theory

COMPUTER SCIENCE N-310 (3 credits)
Intermediate Scientific Programming

COMPUTER SCIENCE N-312 (3 credits)
Data and File Structures I

COMPUTER SCIENCE N-320 (3 credits)
Numerical Methods

COMPUTER SCIENCE N-340 (3 credits)
Special Purpose Computer Systems

COMPUTER SCIENCE N-404 (3 credits)
Formal Languages and Syntactic Analysis

COMPUTER SCIENCE N-405 (3 credits)
Computer Graphics

COMPUTER SCIENCE N-413 (3 credits)
Data and File Structures II

COMPUTER SCIENCE N-421 (3 credits)
Introduction to the Theory of Automata

COMPUTER SCIENCE N-430 (3 credits)
Logical Design and Switching Theory

COMPUTER SCIENCE N-431 (3 credits)
Digital System Design

COMPUTER SCIENCE N-440 (3 credits)
Heuristic Programming

COMPUTER SCIENCE N-450 (3 credits)
Discrete System Simulation

COMPUTER SCIENCE N-491 (6 credits)
Computer Science Project

91.9 Economics

The courses in Economics listed below are acceptable as science credits in the Bachelor of Science degree. Course descriptions can be found in the Sir George Williams Faculty of Arts §41.

ECONOMICS N-270 (3 credits)
Mathematics for Economists I

ECONOMICS N-271 (3 credits)
Mathematics for Economists II

ECONOMICS N-412 (3 credits)
Mathematical Economics I

ECONOMICS N-413 (3 credits)
Mathematical Economics II

ECONOMICS N-476 (3 credits)
Econometrics I

ECONOMICS N-477 (3 credits)
Econometrics II

91.10 Department of Geology

Associate Professor and Chairman of the Department
HENRY S. de ROMER

Associate Professor
ANDRÉ N. DELAND

Assistant Professor
STEPHEN KUMARAPELI

Special Lecturer
PREM SUVASTAVA

91.10.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequence must be read in conjunction with § 91.3, 91.4.
NOTE: Students who enter University with CEGEP Geology 901 will not take N-215 but will have to add 3 credits in Geology during the 3 year programme.
NOTE: The superscript on a course number represents its credit value.

Geology: Specialization
The following courses in an approved sequence constitutes a Specialization in Geology.

Year I
Geol. N-215[3], N-231[3], N-232[3], N-245[3].
Chem. N-241[6].

Year II
Geol. N-322[3], N-323[3], N-342[6], N-420[3], N-346[3], N-347[3], N-353[3].

Year III
Geol. N-349[3], N-352[3], N-421[3], N-455[3], N-456[3], N-461[3], N-462[3].

Geology: Major
The following courses, in an approved sequence, constitute a major in Geology.

Year I
Geol. N-215[3], N-231[3], N-232[3], N-245[3].

Year II
Geol. N-322[3], N-323[3], N-342[6], N-346[3], N-420[3].

Year III
Geol. N-352[3], N-455[3].

Geology: Minor in Ecology
The following courses, in an approved sequence constitute a major in geology with a minor in Ecology:

Year I
Geol. N-215[3], N-231[3], N-232[3], N-245[3]
Biol. N-203[3], N-204[3].

Year II
Geol. N-322[3], N-323[3], N-342[6], N-346[3], N-420[3].
Biol. N-213[3].

Year III
Geol. N-352[3], N-455[3].
Fifteen Ecology area courses (in consultation with Department of Biological Sciences).

Geology: Minor
The following courses, in an approved sequence, constitute a minor in Geology:

Year I
Geol. N-215[3], N-231[3], N-232[3].

Year II
Geol. N-346[3], and N-347[3] or N-342[6].

Year III
Geol. N-323[3], N-420[3], three credits in Geology.

91.10.2 COURSE DESCRIPTIONS

The use of Note A after certain course descriptions indicates that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits.

GEOLOGY N-213 (213)
Introductory Geology I: Earth Materials
This course in no longer offered.

GEOLOGY N-214 (214)
Introductory GeologyII: Earth Processes
This course is no longer offered.

GEOLOGY N-215
Introductory Geology
An elementary study of minerals and rocks, and of the internal and external processes which shape the earth's surface. Laboratory work deals with identification of minerals, rocks and fossils, as well as interpretation of topographic and geologic maps. Field trips to Mt. Royal, Eastern Townships and Laurentians. Lectures and laboratory. (3 credits) *NOTE A/see §200.4*

GEOLOGY N-231 (221)
Mineralogy
The study of the physical properties of minerals; their chemical properties; descriptive and determinative mineralogy; crystallography; various classes of symmetry. A few field trips near Montreal. Lectures and laboratory. (3 credits) *NOTE A/see §200.4*

GEOLOGY N-232 (222)
Optical Mineralogy
Prerequisite: Geology N-231. The study of minerals under the polarizing microscope. Identification of minerals in thin sections and in oil immersion. Lectures and laboratory. (3 credits) *NOTE A/see §200.4*

GEOLOGY N-245
Field Geology I
Prerequisites: Geology N-215 and N-231 or approval of the Department. Two week field school in May right after final exams. The student is introduced to surveying, and geological and geophysical mapping methods. (3 credits)

GEOLOGY N-322 (424)
Sedimentary Rocks and Stratigraphy

Prerequisite: Geology N-232. Sedimentary rocks, diagenetic changes; sedimentary facies; introduction to stratigraphic column and stratigraphic principles. Lectures and laboratory. One field trip around Montreal. (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-323 (425)
Historical Geology

Prerequisite: Geology N-215. Principles of historical geology and geochronology, evolution of major animal groups from Precambrian time to Recent including the evolution of man; geological evolution of North America; natural resources associated with sedimentary rocks. Lectures only. (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-342 (426)
Igneous and Metamorphic Petrology

Prerequisites: Geology N-215, N-231, N-232. Principles of physical chemistry applied to minerals and rocks; study of phase diagrams; the origin, formation, association, description and classification of igneous and metamorphic rocks. Lectures and laboratory. (6 credits) *NOTE:A:/See § 200.4*

GEOLOGY N-346
Structural Geology I

Prerequisite: Geology N-215. Folds and mesostructures and their qualitative and quantitative evaluation. Physical properties of rocks and their behaviour. Several field trips to the Appalachian area. Lectures and laboratory. (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-347
Structural Geology II

Prerequisite: Geology N-346. Non-tectonic structures; primary and secondary structures associated with sedimentary, igneous and metamorphic rocks; faults; evaluation of folds and fractures on geological maps. Lectures and laboratory (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-348 (428)
Structural Geology

This course is no longer offered.

GEOLOGY N-349 (429)
Tectonics

Prerequisites: Geology N-346. Evolution of megastructures of the earth: orogeny; tectonic patterns and hypotheses; emplacement of plutons. Lectures only. (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-352 (422)
Photogeology

Prerequisite: Geology N-342 or permission of the Department. Scope and purpose of photointerpretation; geometry of aerial photographs and basic applied photogrammetry; geological interpretation, both qualitative and quantitative, of aerial photographs from Canada and other countries; techniques used in base map preparation with and without control points; exercises in photogeological mapping using stereoscopes and plotters. Lectures and laboratory. (3 credits)

GEOLOGY N-353
Field Geology II

Prerequisites: Geology N-342 and N-346 or permission of the department. Two week field school in May after the 2nd year final examination period. Working in groups of two, students will map an area in the Appalachians, prepare sections and write a geological report. Group study of important outcrops and quarries in the Eastern Townships and south of the border. Students are expected to pay a minimum amount of their room and board. No regular lecture hours. (3 credits)

GEOLOGY N-370
Analytical Methods in Geochemistry

Prerequisites: CEGEP Chemistry 201; CEGEP Physics 301; CEGEP Mathematics 103 and 203; or equivalent courses. Chemical equilibrium as applied to volumetric and gravimetric procedures; general theory of volumetric titrations; titration curves; application of general titration theory to neutralization precipitation, complexation oxidation-reduction and non-aqueous solvent titrations; theory of potentiometry and potentiometric titrations; theory of gravimetric analysis; methods of separation by chemical and physical means; electrogravimetry and electrolytic separations; absorptimetric theory and absorptimetric methods of analysis. Analyses of major and minor components of geological material. Lectures and laboratory. (4 credits) *NOTE A:/See § 200.4*

GEOLOGY N-420 (223)
Paleontology

A study of the evolution of plants, invertebrates and vertebrates in time and space, the fossil record; preservation, identification and classification of fossils; methods and techniques. Lectures and laboratory (3 credits)

GEOLOGY N-421 (430)
Geology of Canada

Prerequisites: Geology N-215, N-322 amd N-342. The study of the geology, physical features and mineral resources of the five main natural regions of Canada. A number of selected areas will be examined in detail. Lectures only. (3 credits)

GEOLOGY N-455
Ore Deposits

Prerequisites: Geology N-322 and N-342. An introduction to geological and mineralogical features and genesis of selected types of metallic and non-metallic ore deposits. Identification of ore minerals in hand specimen and under the microscope and an introduction to textures of ores. Lectures and laboratory. (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-456
Regional Economic Geology

Prerequisite: Geology N-455. A review of the distribution of ore deposits in time and space considered in the context of their geological environment and tectonic relations. Integrated hand specimen and microscopic examination of carefully located, representative samples from important mining camps. Lectures and laboratory. (3 credits) *NOTE A:/See § 200.4*

GEOLOGY N-460 (440)
Economic Mineral Deposits

This course is no longer offered.

GEOLOGY N-461 (441)
Geophysical Exploration

Prerequisites: Geology N-215, N-231 or permission of the Department. A brief study of the principles of magnetic, gravimetric, electric and seismic methods of mineral exploration; interpretation of geophysical data; organization of exploration programmes; selected case histories. Lectures and laboratory. (3 credits)

GEOLOGY N-462 (442)
Geochemical Exploration

Prerequisites: Geology N-215 and N-231 or permission of the Department. Basic principles; primary and secondary dispersion processes and their significance in geochemical exploration; field and analytical techniques (one field excursion early in the fall term); interpretation of geochemical data; organization of exploration programmes; selected case histories. Lectures and laboratory. (3 credits)

91.11 Department of Mathematics

Professor and Chairman of the Department
VICTOR BYERS

Professor and Associate Dean
FREDERICK W. BEDFORD

Professors
MARTIN HARROW
NORMAN EDWARD SMITH

Visiting Professors
CHARLES FOX
JOHN McNAMEE

Adjunct Professor of Mathematics Education
PAUL C. ROSENBLOOM

Associate Professors
KAILASH K. ANAND
MARY A. BRIAN
G. E. COHEN
MAURICE COHEN
T. DWIVEDI
R. L. HALL
JAMES C. HAYES
N. HERSCOVICS
G. S. LINGAPPAIAH
M. A. MALIK
EUGEN A. POLLITZER
R. RAPHAEL
JOHN SENEZ
MANFRED E. SZABO
J. C. TURGEON
M. ZAKI

Assistant Professors
LEONDA S. ADLER
MORTON M. BELINSKY
A. BOYARSKY
JOSEF BRODY
A. G. BUCKLEY
W. P. BYERS
L. DUBE
J. FIKSEL
JOEL HILLEL
M. KANTER
M. KERVIN
Z. KHALIL
HAROLD W. PROPPE
Y. H. WANG

Sessional Lecturer
M. ALBERTA BOSWALL
A. S. RAO

91.11.1 PROGRAMMES

Students are responsible for satisfying their particular degree requirements, hence the following sequence must be read in conjunction with 91.3, 91.4

NOTE: The superscript on a course number represents its credit value.

Mathematics: Honours

The following courses constitute an honours programme in Mathematics, provided the student maintains the required academic standing:

Year I
Mathematics N-241[6], N-261[6], N-281[6], N-291[3], N-372[3].

Year II
Mathematics N-361[6], N-366[3], N-373[3], N-381[3], N-391[3].

Year III
Mathematics N-461[6], N-466[3], N-467[3], N-491[3], N-492[3].

Twelve credits in year II and year III chosen from among Mathematics N-311[3], N-312[3], N-321[3], N-322[3], N-331[3], N-351[3], N-392[3], N-431[6], N-432[3], N-433[3], N-451[3], N-471[3], N-475[3]; courses in related fields with prior Departmental approval.

Applied Mathematics: Honours

The following courses constitute an honours programme in applied Mathematics, provided the student maintains the required academic standing:

Year I
Mathematics: N-241[6], N-261[6], N-281[6], N-292[6].

Year II
Mathematics: N-311[3], N-351[3], N-361[6], N-372[3], N-373[3].
Option A: Mathematics N-331[6]
Option B: Mathematics N-312[3], N-366[3].

Year III
Mathematics N-433[3], N-434[3]
Option A: Mathematics N-312[3], N-431[6], N-432[3], six credits approved by the Department.
OptionB: Mathematics N-353[3], N-472[3], N-473[3], N-474[3], N-461[6].

Statistics: Honours

The following courses constitute an honours programme in Statistics, provided the student maintains the required academic standing:

Year I
Mathematics N-241[6], N-261[6], N-281[6], N-291[3], N-372[3]

Year II
Mathematics N-351[3], N-352[3], N-361[6], N-366[3], N-381[3], N-391[3]

Year III
Mathematics N-373[3], N-451[3], N-452[3], N-461[6], N-466[3]

Twelve credits in year I and year II chosen from among Mathematics N-311[3], N-312[3], N-321[3], N-331[6], N-341[3], N-342[3], N-343[3], N-431[6], N-441[3], N-467[3], N-471[3], N-491[3], N-492[3], courses in related fields with prior Departmental approval.

Mathematics: Specialization

The following courses constitute a specialization in Mathematics:

Year I
Mathematics N-241[6], N-261[6], N-281[6], N-292[6].

Years II and III
N-372[3], N-373[3], N-361[6], N-366[3], N-381[3], N-391[3], N-466[3], N-491[3], nine credits in Mathematics or related fields approved by the Department.

Students who specialize in Mathematics must register by November 1 of each year with the Department of Mathematics.

Applied Mathematics: Specialization

The following courses constitute a specialization in Applied Mathematics:

Year I
Mathematics N-241[6], N-261[6], N-281[6], N-292[6].

Years II and III
Mathematics N-311[3], N-351[3], N-361[6], six credits chosen from among N-270[6], N-372[3], N-373[3] and eighteen credits chosen from among N-312[3], N-331[6], N-341[3], N-353[3], N-354[3], N-366[3], N-381[3], N-431[6], N-432[3], N-433[3], N-434[3], N-442[3], N-471[3], N-472[3], N-473[3].

Students who specialize in Applied Mathematics must register by November 1 of each year with the Department of Mathematics.

Statistics: Specialization

The following courses constitute a specialization in Statistics:

Mathematics N-241[6], N-261[6], N-281[6], N-290[3], N-312[3], N-341[3], N-343[3], N-351[3], N-352[3], N-372[3],N-441[3], eighteen credits in Mathematics, approved by the Department from among N-291[3], N-331[6], N-342[3], N-353[3], N-354[3], N-361[3], N-431[6], N-442[3], N-451[3], N-452[3].

Students who specialize in Statistics must register by November 1 of each year with the Department.

Mathematics: Major

The following courses, in an approved sequence, constitute a major in Mathematics:
Mathematics N-241[6], N-261[6], N-281[6], N-292[6], **N-361**[6], N-366[3], N-372[3] and 6 additional credits in Mathematics, or the equivalent, approved by the Department from among N-311[3], N-322[3], N-373[3], N-381[3], N-391[3].

Students who major in Mathematics must register by November 1 of each year with the Department of Mathematics.

Applied Mathematics (Optimization): Major

The following courses, in an approved sequence constitute a major in Applied Mathematics (Optimization):
Mathematics N-241[6], N-261[6], N-270[6], N-281[6], N-290[3], N-311[3], and 12 additional credits in Mathematics approved by the Department from among N-291[3], N-312[3], N-331[6], N-351[3], N-366[3], courses in related fields.

Students who major in Applied Mathematics must register by November 1 of each year with the Department of Mathematics.

Statistics: Major

The following courses in an approved sequence constitute a major in Statistics:
Mathematics N-241[6], N-261[6], N-281[6], N-290[3], N-341[3], N-343[3], N-351[3], N-352[6], N-372[3],and 6 additional credits in Mathematics approved by the Department from among N-312[3], N-342[3], N-353[3], N-441[3], N-442[3], N-451[3], N-452[3].

Students who major in Statistics must register by November 1 of each year with the Department.

Mathematics: Minor

The following courses constitute a minor in Mathematics:
Mathematics N-261[6], N-281[6] and 12 additional credits in Mathematics approved by the Department of Mathematics from among N-241[6], N-270[6], N-292[6], N-311[3], N-366[3], N-372[3], N-373[3].
Students following the minor in Mathematics must register by November 1 of each year with the Department of Mathematics.

Statistics: Minor

The following courses constitute a minor in Statistics:
Mathematics N-241[6], N-341[3], N-343[3] and 12 additional credits in Mathematics or a related field approved by the Department of Mathematics from among N-261[6], N-281[6], N-342[3], N-351[3].
Students following the minor in Statistics must register by November 1 of each year with the Department of Mathematics.

Liberal Arts Minor in Mathematics:

Twenty-four credits in Mathematics approved by the Department.

91.11.2 CERTIFICATE IN MATHEMATICS FOR TEACHERS (Elementary School Level)

The Department of Mathematics offers a Certificate in Mathematics for Teachers (Elementary School Level) for the professional development of teachers interested in mathematics. This programme was designed in accordance with the programme-cadre for Elementary Mathematics issued by the General Directorate of Elementary and Secondary Education and approved for perfectionnement by the Higher Education Branch of the Department of Education on February 15, 1974.

Practising teachers are offered the opportunity to improve their knowledge of mathematics in order to help them teach modern mathematics more effectively. The presentation will generally be in workshop form with emphasis on assignments which develop activities for classroom use. Courses will be offered on and off campus during the Winter and Summer months subject to sufficient demand and the availability of suitable instructors.

Programme Director
M. A. BOSWALL
A. SUTHERLAND (Consultant)

Admission Requirements

Entry into the programme requires a general Quebec Teacher Certificate (Elementary Level)

Requirements for the Certificate

The programme consists of 30 credits. Mathematics N-305 (6 credits) is a required course. In some cases where students have completed similar mathematical courses in previous studies, the Mathematics Depart-

ment may also allow pro tanto credits up to a maximum of 12 credits.

Courses
Mathematics N-300[6], N-301[6], N-302[6], N-303[6], N-304[6], N-305[6], N-307[3], N-309[3].

91.11.3 CERTIFICATE IN MATHEMATICS FOR TEACHERS (Junior Secondary School Level)

The Department of Mathematics offers a Certificate in Mathematics for teachers who teach mathematics at the junior high school level. Some of the courses offered have been specially designed to deal with new subject matter which is being introduced into the secondary school curriculum, as well as with aspects of mathematical pedagogy necessary for the teaching of this material. This programme was approved for perfectionnement on February 14, 1974, by the Higher Education Branch of the Department of Education.

Programme Director
MARY A. BRIAN
C. GAULIN (Consultant)

Admission Rerquirements
Entry into the programme requires a Quebec Teacher Certificate.

Requirements for the Certificate
The programme consists of 30 credits. Mathematics N-400 (3 credits) is a required course. In some cases where students have completed similar mathematical courses in previous studies, the Mathematics Department may modify a student's programme to meet his professional requirements. It may also grant pro tanto credits up to a maximum of 12 credits.

Courses
Mathematics N-400[3], N-401[6], N-402[3], N-403[3], N-404[6], N-405[3], N-406[3], N-408[3].

91.11.4 COURSE DESCRIPTIONS

The use of Note A after certain course descriptions indicates that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits.

MATHEMATICS N-200 (3 credits)
MATHEMATICS N-201 (3 credits)
MATHEMATICS N-202 (3 credits)
MATHEMATICS N-203 (3 credits)
MATHEMATICS N-204 (3 credits)
MATHEMATICS N-205 (3 credits)
MATHEMATICS N-206 (3 credits)
MATHEMATICS N-207 (3 credits)
MATHEMATICS N-208 (3 credits)
MATHEMATICS N-209 (3 credits)

Descriptions of the above courses are listed in the Sir George Williams Faculty of Arts. § 41.17.
NOTE: Science students may not take the above Mathematics courses for credits.

MATHEMATICS N-210
Mathematics for the Biological Sciences
Prerequisite: CEGEP Mathematics 103 or equivalent. Set theory, combinatorics, probability, matrices, differential and difference equations; applications to the biological sciences. (3 credits)

MATHEMATICS N-241 (440)
Introductory Mathematical and Applied Statistics
Prerequisite: CEGEP Mathematics 203 or equivalent. The introductory mathematical theory of statistic including: the experimental approach to statistics, probability, distributions, moments and sampling theory, problems in estimation, hypothesis testing, correlation and regression. (6 credits)

MATHEMATICS N-261
Advanced Calculus
Prerequisites: CEGEP Mathematics 105, 203. Methods of integration, Vector functions of a single variable, curves. Scalar functions of several variables, limits, continuity, partial derivatives, total differential. Vector functions of several variables, divergence, curl. Maxima and minima. Multiple integrals, change of variables. Line integrals, Green's theorem . . . Surface integrals, divergence theorem, Stokes' theorem. Applications. (6 credits)

MATHEMATICS N-270 (452)
Differential Equations
Prerequisite: CEGEP Mathematics 203 or equivalent. First order first degree equations, linear equations, operators, Laplace transforms, series solutions and special functions, numerical methods, elementary partial equations, Fourier series, application to systems. (6 credits) *NOTE A/See § 200.4*

MATHEMATICS N-271
Differential Equations I
This course is no longer offered. It is replaced by Mathematics N-372.

MATHEMATICS N-280
Matrix Algebra
This course is no longer offered.

MATHEMATICS N-281
Linear Algebra I
Prerequisites: CEGEP Mathematics 101, 105 or equivalent. Vectors in Rn, matrices, linear equations, vector spaces, linear transformations, determinants, equivalence relations on matrices, characteristic values and vectors, diagonalization, metric concepts. (6 credits)

MATHEMATICS N-290
Algebraic Systems (Introduction)
Prerequisite: Collegial pre-science mathematics profile or equivalent. Sets, functions, binary operations, examples of number systems, polynomial functions, divisibility, definitions and examples of groups and subgroups, fields. (3 credits) *NOTE A/See § 200.4*

MATHEMATICS N-291
Algebraic Systems (Continuation)
Prerequisite: Permission of the Department. Groups, rings, homomorphisms, integral domains, fields, polynomial rings. (3 credits) *NOTE A/See § 200.4*

MATHEMATICS N-292
Algebraic Systems I
Prerequisite: Collegial pre-science mathematics profile or equivalent. Sets, functions, binary operations, examples of number systems, polynomial functions, divisibility, groups, rings, homomorphisms, integral domains, fields, polynomial rings. (6 credits) *NOTE A/See § 200.4*

MATHEMATICS N-300
Number Systems
Sets, mathematical systems, concept of number, systems of numeration, operations and relations, whole numbers, fractional numbers, in-

tegers, rational numbers, irrational numbers, real numbers, geometric representations, measurement (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-301
Mappings
Prerequisite: Mathematics N-300. Mappings in the number systems, geometric transformations, translations, dilations, systems of numeration in bases other than 10, order axions, inequalities, absolute value, elementary number theory, modular (clock) arithmetic (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-302
Transformation Geometry
Prerequisite: Mathematics N-300. Geometry in the Elementary School Programme; sets; plane and solid geometry; motion geometry; geometric patterns and transformations, translations, reflections, rotations, dilations and their combinations; isometries; preparation of visual aids. (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-303
Measurement
Prerequisites: Mathematics N-301, N-302. Measures and measuring; probability concepts, algorithms, and flow charting; use of graphical methods in teaching. (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-304
Advanced Topics in Elementary Mathematics
Prerequisite: Mathematics N-303. This course will be oriented to the needs of the students and the School Boards. Suggested topics: Vectors (arrow arithmetic); probability and statistics; mathematics in science and society; relation between number and geometry; role of induction and deduction in teaching methods; use of proofs. (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-305
Psychology of Mathematical Education
Prerequisites: Any three of Mathematics, N-300, N-301, N-302, N-303, N-304. Introduction to the history of Mathematics; mathematical development in the child; methods of evaluation; teaching techniques. This course will be given jointly by a mathematician and an educational psychologist and an attempt will be made to integrate learning theory with the teaching of mathematics. (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-307
Selected Topics in Mathematics I
Prerequisite: Permission of the Department. Subject matter will differ from term to term and from year to year to take advantage of the specific competencies and the special interests of the instructor as well as the student. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-309
Selected Topics in Mathematics II
Prerequisite: Permission of the Department. Subject matter will differ from term to term and from year to year to take advantage of the specific competencies and the special interests of the instructor as well as the student. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-311
Numerical Analysis I
Prerequisite: Collegial pre-science mathematics profile or equivalent. Introduction to computers and Fortran, solutions of equations, curve fitting, numerical differentiation and integration, matrix computation, errors. Lectures and laboratory. (3 credits)

MATHEMATICS N-312
Numerical Linear Algebra
Prerequisite: Mathematics N-281 or equivalent. Linear systems, matrix inversion, relaxation methods, method of least squares, G-inverses, canonical forms, determination of characteristic values, applications. (3 credits)

MATHEMATICS N-321
Set Theory
Prerequisites: 18 credits in post-collegial mathematics. Intuitive logic, axiomatic set theory, ordinals, axiom of choice, cardinals. (3 credits)

MATHEMATICS N-322
Mathematical Logic
Prerequisites: 18 credits in post-collegial mathematics. First-order theories, models, incompleteness, selected topics. (3 credits)

MATHEMATICS N-331
Deterministic Methods of Operations Research
Prerequisite: Mathematics N-281 or equivalent. Formulation of mathematical models in the deterministic case, methods of solution, testing the models. Application to allocation (linear and dynamic programming, duality), competition (game theory), scheduling, networks and flow. Emphasis on mathematical methods, including matrix algebra and search techniques. (6 credits)

MATHEMATICS N-341
Experimental Statistics
Prerequisite: Mathematics N-241 or equivalent. Experimental models. Regression and correlation, analysis of variance. Experimental designs. Randomized blocks, Latin squares, factorial confoundings. (3 credits)

MATHEMATICS N-342
Industrial Statistics
Prerequisite: Mathematics N-241 or equivalent. Concepts of statistical control, X, R, P and C charts. Acceptance sampling, sequential probability ratio tests, sampling inspection, continuous sampling plans, reliability and life tests. (3 credits)

MATHEMATICS N-343
Data Analysis and Survey Sampling
Prerequisite: Mathematics N-241 or equivalent. Basic concepts of sampling. Simple, stratified, systematic, cluster sampling. Optimum allocation, ratio estimates. Curve fitting, goodness-of-fit tests, non-parametric tests, correlation and regression (bivariate and multivariate). Course time equally divided between theory and practical work. (3 credits)

MATHEMATICS N-351
Discrete Probability and Markov Chains
Prerequisite: Mathematics N-241. Axiomatic approach to probability theory, Bayes' rule, occupancy, runs and matching problems. Discrete random variables and their distributions. Generating functions. Introduction to Markov chains and queues. (3 credits)

MATHEMATICS N-352
Mathematical Statistics
Prerequisites: Mathematics N-241, N-261. Introduction to multivariate distributions, sampling distributions, point and interval estimation, tests of hypotheses (parametric and non-parametric), regression models. (3 credits)

MATHEMATICS N-353
Stochastic Processes and Applications
Prerequisite: Mathematics N-351. Continuous time stochastic processes. Poisson processes, continuous time Markov processes, queuing models, birth and death processes, renewal theory and reliability of systems. (3 credits)

MATHEMATICS N-354
Information Theory
Prerequisite: Mathematics N-351 or equivalent or permission of Department. Information and sources, Shannon's theorem for Markov sources.

Probability relations in a channel, mutual information, error probabilities and decision rules. (3 credits)

MATHEMATICS N-361
Real Analysis

Prerequisites: Mathematics N-261, N-281. Metric spaces, sequences and series, continuity, differentiation, Riemann integration, uniform convergence, equicontinuity, Weierstrass theorem. Differential forms, simplexes and chains, Stokes' theorem. (6 credits)

MATHEMATICS N-366
Complex Analysis I

Prerequisite: Mathematics N-261. Algebra and geometry of complex numbers, analytic functions, Cauchy-Riemann equations, the Cauchy integral formula, Taylor's and Laurent's theorems, calculus of residues. (3 credits)

MATHEMATICS N-371
Differential Equations II

This course is no longer offered. It is replaced by Mathematics N-373.

MATHEMATICS N-372
Differential Equations I

Prerequisites: CEGEP Mathematics 105, 203; Mathematics N-281 previously or concurrently. First order differential equations, applications of first order differential equations. Second order linear equations, series solutions of second order linear equations, higher order linear equations, systems of equations. Difference equations. (3 credits) *NOTE A/See § 200.4*

MATHEMATICS N-373
Differential Equations II

Prerequisites: Mathematics N-372, N-366. Equations of hypergeometric type (Bessel's and Legendre's equations). Laplace transform, inverse transform, applications to partial differential, and integral, equations. Fourier series. Boundary value problems and Sturm-Liouville theory. (3 credits) *NOTE A/See § 200.4*

MATHEMATICS N-381
Linear Algebra II

Prerequisites: Mathematics N-281, N-291. Matrices, linear transformations, determinants, metric concepts, inner product spaces, dual spaces, spectral theorem, bilinear and quadratic forms, canonical forms for linear transformations, matrix functions, selected topics. (3 credits)

MATHEMATICS N-391
Algebraic Systems II

Prerequisite: Mathematics N-291. Groups: permutation groups, Cayley's theorem, cyclic groups, Lagrange's theorem, normal subgroups, quotient groups, isomorphism theorems. Rings: ideal and quotient rings, isomorphism theorems, characteristic. Fields: construction of quotient fields. Polynomials: polynomial rings, division algorithm, g.c.d., unique factorization, roots of a polynomial over a field. Selected topics. (3 credits)

MATHEMATICS N-392
Elementary Number Theory

Prerequisites: 18 credits in post-collegial mathematics. Number systems, division and factorization, number-theoretic functions, congruences, algebraic congruences and primitive roots, quadratic residues, diophantine equations. (3 credits)

MATHEMATICS N-400
Seminar on the Teaching of Mathematics

Prerequisite: Permission of the Department. This course is conducted in the form of a workshop and examines alternative methods of presentation of mathematical ideas at the secondary school level. It studies relevant aspects of the psychological development of the adolescent in the context of existing mathematics curricula. (3 credits) *NOTE: This course should be taken at the end of the programme. This course is available only to practising teachers.*

MATHEMATICS N-401
Functions

Prerequisite: Collegial mathematics or equivalent. Sets and logic; ordered field of real numbers; relations, functions; exponential, logarithmic and trigonometric function. (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-402
Algebra

Prerequisite: Mathematics N-401 or equivalent previously or concurrently. Proofs and implications. The natural numbers and the integers. Mathematical induction. Divisibility, the Euclidean Algorithm, primes, the Fundamental Theorem of Arithmetic. Sequences and progressions. Complex numbers, polynomials, the Fundamental Theorem of Algebra. Combinatorial Mathematics, the Binomial Theorem. Systems of equations, determinants, Cramers' Rule. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-403
Calculus I

Prerequisite: Mathematics N-401 or equivalent. Functional Notation, Limits and Continuity, Differentiation of Polynomials. The power, product, quotient and chain rules. Implicit differentiation. Higher derivatives. Mean Value Theorem, Rolles Theorem. Maxima and Minima.
Applications: Tangents to plane curves, related rates. The differential, use in finding approximations. Indefinite and definite integrals, areas and volumes. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-404
Vector Geometry

Prerequisite: Mathematics N-402 or equivalent. Vector spaces, linear transformations; affine geometry in the plane and 3-space; inner products; Euclidean geometry; affine subspaces; analytic geometry of lines and planes; quadratic forms; conics and quadrics; polar coordinates; parametric equations. (6 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-405
Calculus II

Prerequisite: Mathematics N-403. Differentiation and integration of Trigonometric functions. Derivatives of Inverse Trigonometric functions, logarithmic functions and exponential functions. Methods of integration by parts, by substitution, by separation into partial fractions. Improper integrals, L'Hopitals' Rule. Series: Convergency tests, Maclaurin and Taylor Theorems. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-406
Matrix Algebra

Prerequisite: Mathematics N-402 or equivalent. Operations on Matrices, Determinants, Cramers' Rule, Systems, Rank, the inverse matrix, the Gauss-Jordan Method, mappings, matrix transformations, characteristic values, vectors, quadratic forms. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-408
Transformation Geometry

Prerequisite: Mathematics N-401 or equivalent. Distance preserving motions in the plane; affine transformations with applications in Euclidean geometry. Projective transformations and applications to conics. (3 credits) *NOTE: This course is available only to practising teachers.*

MATHEMATICS N-431
Probabilistic Methods of Operations Research

Prerequisites: (a) Mathematics N-261; N-351 previously or concurrently; (b) Mathematics 440, 452. Difference and differential-difference equations, z transforms, stochastic distributions. Markov chains, queuing theory, inventory theory, reliability and renewal theory, competition and introduction to decision theory, dynamic programming, simulation and Monte Carlo techni-

ques; formulation, testing and stability of mathematical models incorporating uncertainty. (6 credits)

MATHEMATICS N-432
Theory of Graphs and Networks

Prerequisite: Mathematics N-331. Directed and undirected graphs. Partitions, planar and non-planar graphs, matrix representation, applications, network theory. (3 credits)

MATHEMATICS N-433
Calculus of Variations

Prerequisite: Mathematics N-371 or N-270. Nature of problems. Weak variations, the first variation, Euler's equation. The second variation, Jacobi's equation, Legendre's test, conjugate points. Relative maxima and minima, isoperimetrical problems. Integrals with variable end points. Applications to problems in pure and applied mathematics, the principle of least action. Strong variations, the Weierstrass E-function. (3 credits)

MATHEMATICS N-434
Optimization Theory

Prerequisite: Permission of Department. A survey of optimization methods, search techniques, non-linear programming, dynamic programming. An introduction to optimal control and to the maximum principle. (3 credits)

MATHEMATICS N-441
Seminar in Applied Statistics

Prerequisite: Permission of the Department. Formulation of some real-life problems where applications of statistical methods can be exploited. Analysis, interpretation of data and inference of results. A report on a specific aspect of statistics may be required. (3 credits)

MATHEMATICS N-442
Introduction to Reliability

Prerequisite: Mathematics N-351. Statistical failure models and reliability testing; system reliability; standby redundancy with and without repair; limit distributions. (3 credits)

MATHEMATICS N-451
Topics in Probability

Prerequisites: Mathematics N-261; N-351 or permission of Department. Axioms for probability space. Random variables. Distribution functions, mathematical expectation. Law of large numbers. Limit theorems. Stochastic processes, Markov, Poisson and Gaussian Processes. (3 credits)

MATHEMATICS N-452
Linear Statistics

Prerequisites: Mathematics N-261, N-281, N-352. Multivariate normal distribution, distribution of quadratic forms. Linear models. General linear hypothesis of full rank. (3 credits)

MATHEMATICS N-461
Real Analysis II

Prerequisites: Mathematics N-361, N-391. Measure spaces, Lebesgue measure, measurable functions, Lebesgue integration. Lebesgue-Stieltjes integration. Function spaces, Ascoli-Arzela theorem, Stone-Weierstrass theorem, Hilbert spaces, Hahn-Banach theorem. (6 credits)

MATHEMATICS N-466
Complex Analysis II

Prerequisite: Mathematics N-366. Analytic functions, power series, Cauchy's theorem, Morera's and Liouville's theorems, singularities, maximum modulus principles, Rouche's theorem. Conformal mappings, linear transformations, analytic continuation. Special functions. (3 credits)

MATHEMATICS N-467
Complex Analysis III

Prerequisite: Mathematics N-466. Normal families, Riemann mapping theorem, harmonic functions, elliptic functions, univalent functions, selected topics. (3 credits)

MATHEMATICS N-471
Partial Differential Equations

Prerequisite: Mathematics N-373. Classification of partial differential equations, the Cauchy-Kowalewski theorem, characteristics, boundary value and eigenvalue problems for elliptic equations, initial value and initial boundary value problems for parabolic and hyperbolic equations. (3 credits).

MATHEMATICS N-472
Linear Systems

Prerequisite: Mathematics N-281; Mathematics N-270 or N-372, N-373. State space analysis and design of continuous and discrete systems. Controllability and observability, modal control, pole displacement techniques, Luenberger observers, Liapunov stability. (3 credits). *NOTE A/See § 200.4.*

MATHEMATICS N-473
Non-linear Systems

Prerequisites: Mathematics N-280, N-270 or N-373. Examples of linear and non-linear systems, phase-plane analysis; periodic solutions and limit cycles; non-linear differential equations; perturbation methods; stability in the sense of Liapunov; linearization, Liapunov's direct method; Lagrange stability and boundedness of solutions, circle and Popov's criteria. (3 credits). *NOTE A/See § 200.4.*

MATHEMATICS N-474
Introduction to Mathematical Control Theory

Prerequisites: Mathematics N-361 and N-472. Linear control systems. Attainable sets: compactness, convexity, continuity in time. Controllability and observability. Time optimal control. Maximum principle. Examples of physical systems. Switching curves. Optimal control with quadratic cost. (3 credits).

MATHEMATICS N-475
Geometry and Topology

Prerequisite: Permission of Department. Topological spaces, separation axioms, compactness, connectedness. Introduction to combinatorial and algebraic topology: Euler characteristic; classification of surfaces; winding number of a curve, degree of a map, vector fields, applications; map colouring problems. (3 credits).

MATHEMATICS N-491
Abstract Algebra I

Prerequisite: Mathematics N-391. Groups: composition series, direct product of groups, abelian groups, Sylow's theorems, solvable groups. Rings: Euclidean rings, unique factorization domains, principal ideal domains. Maximal, prime and primary ideals; ideals in noetherian rings, modules and vector spaces. Algebras. Selected topics. (3 credits).

MATHEMATICS N-492
Abstract Algebra II

Prerequisite: Mathematics N-491. Fields: prime fields; algebraic, finite, simple, separable, inseparable, normal extensions; finite fields; perfect and imperfect fields. Group characters. Galois theory; the fundamental theorem, solvability by radicals, transcendental extensions. (3 credits).

MATHEMATICS N-499
Mathematical Thinking

Prerequisite: Permission of Department. This course is intended to stimulate the student's mathematical creativity and to improve his ability to think systematically, analyze problems and communicate his reasoning. Students participate actively in discussing and solving problems drawn from a variety of sources (including previous Putnam competitions) and are expected to explain their thinking both orally and in writing. Discussions include the following topics: problem posing; Polya's techniques of problem solving; equivalence and similarity of problems; generalization; applications. The problems are selected from: combinatorics, geometry, group theory, number theory, real analysis, etc. (3 credits).

91.12 Department of Physics

Associate Professor and Chairman of the Department
STANLEY P. MORRIS

Visiting Professor
WALTER R. RAUDORF

Associate Professors
DAVID E. CHARLTON
BARRY FRANK
ARLIN L. KIPLING
JOHN A. MACKINNON
SUSHIL K. MISRA
JEAN-PIERRE PÉTOLAS
RAMESH C. SHARMA
ADOLPH E. SMITH

Assistant Professor
NELSON W. EDDY

Adjunct Assistant Professor
PHOTIOS A. ANNINOS

91.12.1 PROGRAMMES

NOTE: The superscript on a course number represents its credit value.

Students are responsible for satisfying their particular degree requirements, hence the following sequence *must* be read in conjunction with § 91.3, 91.4

Physics: Honours

The following courses constitute an honours programme in Physics, provided the student maintains the required academic standing.

Experimental Option

Year I

Physics N-241[6], N-251[6], N-291-[2], N-292[2], Mathematics N-261[6]

Years I, II and III

Physics N-336[6], N-352[3], N-355[5], N-364[3], N-392[2], N-394[1], N-295[4], or N-395[4], N-433[3], N-465[3], or N-467[3], N-477[3], N-478[3], N-493[1], N-495[1], N-496[4], nine credits from among Physics N-345[6], N-457[6], N-435[3], N-465[3], N-467[3].

Theoretical Option

Year I

Physics N-241[6], N-251[6], N-291[2] or N-292[2], Mathematics N-261[6].

Years I, II and III

Physics N-336[6], N-345[6], N-352[3], N-355[5], N-295[4] or N-395[4], N-364[3], N-394[1], N-433[3], N-457[6], N-477[3], N-478[3], six credits from among Physics N-435[3], N-465[3], N-467[3]; three credits from among Physics N-291[2], N-292[2], N-392[1], N-493[1], N-495[1], N-435[3], N-465[3], N-467[3].

Physics: Specialization

The following courses in an approved sequence constitute a specialization in Physics.

Experimental

Year I

Physics N-241[6], N-251[6], N-291[2], N-292[2], Mathematics N-261[6].

Years I, II and III

Physics N-336[6], N-352[3], N-355[5], N-364[3], N-392[1], N-394[1], N-295[4], or N-395[4], N-433[3], N-465[3] or N-467[3], N-477[3], N-493[1], N-495[1], N-496[4].

Theoretical

Year I

Physics N-241[6], N-251[6], N-291[2] or N-292[2], Mathematics N-261[6].

Years I, II and III

Physics N-336[6], N-345[6], N-352[3], N-364[3], N-394[1], N-433[3], N-457[6], N-477[3], N-478[3], six credits chosen from among Physics N-435[3], N-465[3], N-467[3]

Physics-Marketing: Specialization

The following courses, in an approved sequence, constitute an interdisciplinary specialization in Physics-Marketing.

Physics N-241[6], N-251[6], N-291[2], N-292[2], N-364[3], N-394[1], N-295[4] or N-395[4], twelve credits chosen from among Physics N-296[5], N-336[6], N-345[6], N-352[3], N-355[3], N-392[1], N-396[5], N-397[5], 433[3], N-435[3], N-457[6], N-465[3], N-467[3], N-477[3], N-478[3], N-480[4], N-493[1], N-495[1], Mathematics N-261[6].
Quantative Methods 243[3] and 244[3] or equivalent.
Computer Science N-211[3].
Accountancy 213[3], 214[3], 216[3].
Management 213[3], 214[3].
Economics N-209[3] and N-210[3] or N-212[6].
Marketing 213[3], 350[3], 352[3].
Nine credits from Marketing 402[3], 403[3], 452[3], 453[3], 454[3], 462[3], 463[3], 464[3], 485[3], 490[3].

Physics: Major

Thirty-six credits in Physics chosen in consultation with the Department.

Physics: Minor

Twenty-four credits in Physics chosen in consultation with the Department.

NOTE: It is recommended that Physics students take the following minor in Mathematics: N-261[6], N-270[6], N-281[6], N-311[3], N-366[3].

91.12.2 COURSE DESCRIPTIONS

The use of Note A after certain course description indicates that there exists an equivalent

course and that students who have the equivalent course may not take the listed course for credits. *NOTE: All laboratory courses in Physics with one credit must be completed in a single term.*

In general, the experiments involved in the Laboratory courses can be done from week to week at variable times chosen by the student.

PHYSICS N-204
Mechanics

Prerequisite: CEGEP Mathematics 103 or equivalent, previously or concurrently. Kinetatics. Newton's Laws of Motion. Statics, dynamics. Conservation of momentum and energy. Periodic motion. Lectures only. (3 credits) *NOTE A/see § 200.4. See Physics N-224 for laboratory associated with this course.*

PHYSICS N-205
Electricity and Magnetism

Prerequisite: Physics N-204 or equivalent. Electrical charge and Coulomb's Law. Electrical field and potential. Capacity. Steady state and transient currents. Electromagnetic induction and alternating currents. Lectures only. (3 credits) *NOTE A/see § 200.4. See Physics N-225 for laboratory associated with this course.*

PHYSICS N-206
Waves and Modern Physics

Prerequisite: Physics N-204 or equivalent. Simple harmonic motion. Wave propagation. Superposition. Stationary waves. Doppler effect. Interference. Diffraction. Photoelectric effect. Compton effect. Bohr's atom. Radioactivity, fission, fusion. Lectures only. (3 credits) *NOTE A/see § 200.4. See Physics N-226 for laboratory associated with this course.*

PHYSICS N-210 (210)
Discoveries in Physics

A non-mathematical course in physics specifically designed for students who have had little or no experience in physics. It traces the fundamental ideas from which modern physics has emerged and attempts to develop insights into the understanding of natural phenomena. Lectures only. (6 credits) *NOTE A/see § 200.4. Science student may not take this course for credit.*

PHYSICS N-224
Introductory Experimental Mechanics

Prerequisite: Physics N-204 previously or concurrently or permission of the Department. A laboratory course covering fundamental experiments in classical mechanics. Experiments will include: resolution of forces, centrifugal forces and conservation of energy, pendulums. Laboratory only, 10 experiments. (1 credit) *NOTE A/see § 200.4*

PHYSICS N-225
Introductory Experimental Electricity

Prerequisite: Physics N-205 previously or concurrently or permission of the Department. A laboratory course covering fundamental experiments in electricity. Experiments will include Kirchoff's Law, resistors in series and parallel, oscilloscopes, induction, AC. Laboratory only, 10 experiments. (1 credit) *NOTE A/see § 200.4*

PHYSICS N-226
Introductory Experimental Waves and Modern Physics

Prerequisite: Physics N-206 previously or concurrently or permission of the Department. A laboratory course covering the fundamental experiments in waves and modern physics. Experiments include spectrometer measurements, Newton's rings, and measurements involving radioactivity. Laboratory only, 10 experiments. (1 credit) *NOTE A/see § 200.4*

PHYSICS N-241
Classical Mechanics 1

Prerequisite: Physics N-204 or CEGEP Physics 101 or equivalent. Mathematics N-261 previously or concurrently. Laws of classical mechanics, statics, kinematics, dynamics of a particle, moving reference frames, central forces, dynamics of a system of particles, dynamics of rigid bodies in a plane, Lagrange's equations. Lectures only. (6 credits) *NOTE A/see § 200.4 See Physics N-291 for associated laboratory course.*

PHYSICS N-243
Classical Mechanics of Particles

Prerequisites: Physics N-204 or equivalent, Math N-261 previously or concurrently. Physical quantities of Mechanics, Laws of Classical Mechanics, Kinematics of a Particle, Dynamics of a Particle in Straightline and General Motion Moving Reference Systems. Lectures only. (3 credits) *NOTE A/see § 200.4*

PHYSICS N-244
Classical Mechanics of Rigid Bodies

Prerequisite: Physics N-243 Dynamics of a System of Particles, Statics of Rigid Bodies in a Plane and in General Motion, Lagrange's Equations. Lectures only. (3 credits) *NOTE A/see § 200.4*

PHYSICS N-251
Electrodynamics 1

Prerequisites: Physics N-205 or CEGEP Ph. 201 or equivalent, Mathematics N-261 previously or concurrently. Electric forces and electric fields, electric potential, capacitance, dielectric theory and behaviour, direct currents, resistance, thermoelectricity, moving charges and magnetic fields, electromagnetic induction, the magnetic properties of matter, galvanometers, transient currents, alternating current circuits, Maxwell's equations and electromagnetic waves. Lectures only. (6 credits) *NOTE A/see § 200.4. See Physics N-292 for associated laboratory course.*

PHYSICS N-291
Experimental Mechanics 1

Prerequisite: Physics N-241 previously or concurrently. A laboratory course in mechanics. Experiments include the Kater pendulum, forced oscillations, damping and resonance, inelastic and elastic collisions. Laboratory only, 20 experiments. (2 credits) *NOTE A/see § 200.4*

PHYSICS N-292
Experimental Electrodynamics

Prerequisite: Physics N-251 previously or concurrently. A laboratory course in electrodynamics. Experiments include electrostatic focussing, motion in crossed magnetic and electric fields, resonance, Fourier analysis, feedback, transistors, oscillators. Laboratory only, 20 experiments. (2 credits) *NOTE A/see § 200.4*

PHYSICS N-295
High Frequency Electronics 1

Prerequisite: CEGEP Physics 201 or Physics N-205 or permission of the department. A practical laboratory course in electronics. Topics included are Circuit boards and schematics, loading of circuits under test, voltage dividers and shunt resistors, continuity testing, capacitors, coils, resonant circuits, tuning, rectifiers, bridges, filters, voltage regulation, common emitter circuits, common base circuits, common collector circuits, oscillators, multivibrators, power amplifiers, amplifier frequency response, amplifier gain control, positive and negative feedback, frequency modulation, i.f. transformers, demodulation, ratio detectors, distortion, converters, signal-to-noise ratios. Experiments are performed in the frequency range DC to 1 MHz. All circuits are studied both separately and combined in an operating receiver. Laboratory only. (4 credits) *NOTE A/see § 200.4*

PHYSICS N-296
High Frequency Electronics II

Prerequisite: Physics N-295 or equivalent. A continuation of Physics N-295. Topics included

are video amplifiers, quadrature coils, detector circuits, sync circuits, limiting AGC, Tuning of VHF and UHF circuits, high voltage generators, antenna matching. Experiments are performed in the frequency range 1 MHz to 100 MHz. All circuits are studied both separately and combined in an operating receiver. Laboratory only. (5 credits).

PHYSICS N-336 (471)
Methods of Theoretical Physics

Prerequisites: Mathematics N-261, Physics N-204 or CEGEP Physics 101 or equivalent. Sturm-Liouville Theory; stretched string, Fourier series and application, Fourier integrals, vibratins membrane, operators, method of eigenfunction expansions, cylindrial functions, spherical harmonics, perturbation theory for S.L. problem. Group theory: symmetry considerations, definitions, theory of matrix representations, applications. Tensor calculus; tensor algebra, line element, covariant differentiation. Lectures only. (6 credits).

PHYSICS N-345 (441)
Advanced Classical Mechanics and Relativity

Prerequisites: Physics N-241; Variational principles and Lagrange's equations, kinematics of rigid body motion, Hamilton's equations of motion, Canonical transformations, Hamilton-Jacobi theory, small oscillations, special relativity, mechanics of deformable bodies. Lectures only. (6 credits).

PHYSICS N-352
Optics 1

Prerequisites: Mathematics N-261 and Physics N-205 or CEGEP Physics 201 or equivalent. Geometrical optics: Plane surfaces, spherical surfaces, optical instruments. Wave optics: review of simple harmonic motion, wave equation, superposition of waves, electromagnetic waves, scattering, polorization, interference-coherent sources, interference-uniform extended sources, Fresnel diffraction, waves in a dispersive medium, lasers. Lectures only. (3 credits) *NOTE a/see § 200.4. See Physics N-392 for associated laboratory course.*

PHYSICS N-355
Electronics I

Prerequisites: Physics N-251, N-292 and N-295 or Physics N-395 previously or concurrently. Introductory concepts, AC circuit theory, electrical measuring instruments.(semi-conductor physics, semi-conductor devices, input transducers and out put transducers) transistor theory, modern signal processing techniques for optimal signal to noise ratios, amplifiers, oscillators, pulse and switching circuits, additional electronic devices. Lectures only, (5 credits). *NOTE A/see § 200.4. See Physics N-395 for associated laboratory course.*

PHYSICS N-364
Atomic Physics 1

Prerequisites: Mathematics N-261; Physics N-206 or CEGEP Physics 301 or equivalent or permission of the department. Kinetic theory, origin of quantum theory, electrons and ions, electromagnetic radiation, the Rutherford atom, the Bohr atom, quantum mechanics, atomic structure, molecules and solids. Lectures only. (3 credits). *NOTE A/see § 200.4. See Physics N-394 for associated laboratory course.*

PHYSICS N-383
Medical Physics

Prerequisite: CEGEP Pre-Science or equivalent. This course provides a background in the physics needed to understand instrumentation used in the fields of biology and medicine. Topics are taken from the fields of mechanics, properties of materials, thermodynamics, optics, electromagnetic theory and radiation physics. Lectures only. (3 credits).

PHYSICS N-392
Experimental Optics I

Prerequisite: Physics N-352 previously or concurrently. An experimental course in optics. Experiments include diffraction, optical instruments, resonance and various experiments using lasers. Laboratory only, 10 experiments. (1 credit) *NOTE A/see § 200.4.*

PHYSICS N-394
Experimental Atomic Physics I

Prerequisites: Physics N-364 previously or concurrently, Physics N-226 or CEGEP Physics 301 or equivalent. An experimental course in atomic physics. Experiments include the Frank-Hertz experiment, the Zeeman effect, Mass spectrometer and some X-ray work. Laboratroy only, 10 experiments. (1 credit). *NOTE A/see § 200.4.*

PHYSICS N-395
Experimental Electronics I

Prerequisites: Physics N-205 or CEGEP Physics 201 or equivalent. A practical laboratory course in electronics which begins with simple circuitry such as resistors in series and parallel and develops to diode logic gates. Topics included are resonance circuits, rectifiers, use of the oscilloscope, d.c. amplifiers, field effect transistors, operational amplifiers. Laboratory only. (4 credits). *NOTE A/see § 200.4.*

PHYSICS N-396
Experimental Electronics II

Prerequisite: Physics N-395. A continuation of Physics N-395. This laboratory will develop from digital electronic techniques to their use in a small digital computer. Laboratory only. (5 credits).

PHYSICS N-397
Experimental Medical Electronics

Prerequisites: Physics N-295 or N-395 or equivalent. A laboratory course on the maintenance and use of medical instruments including ECG monitor, electro-cardiograph, cardiotachometer, blood pressure recorder, respiration rate recorder and clinical thermometer. The component parts of the instruments are studied first and then the instruments are constructed and operated. Laboratory only. (5 credits).

PHYSICS N-433
Thermodynamics I

Prerequisites: Mathematics N-261, Physics N-241 or equivalent. Temperature, simple thermodynamic systems, work, heat and first law, ideal gases, kinetic theory, heat engines, reversible and irreversible processes, entropy, thermodynamics potentials. Lectures only. (3 credits) *NOTE A:/see § 200.4. See Physics N-493 for associated laboratory course.*

PHYSICS N-434 (232)
Thermodynamics

This course is no longer offered. It is replaced by Physics N-433 and Physics N-493.

PHYSICS N-435
Statistical Physics

Prerequisite: Physics N-433 or equivalent. Basic probability concepts, statistical description of systems of particles, thermal interaction, microscopic theory and macroscopic measurements, Canonical distribution in the classical approximation, general thermodynamic interaction, elementary kinetic theory of transport processes. Lectures only. (3 credits)

PHYSICS N-457 (451)
Advanced Electrodynamics

Prerequisites: Physics N-251. Fundamentals of electromagnetics, multipole fields, the equations of Laplace and Poisson, the electromagnetic field equations, electromagnetic waves, reflection and refraction, the Lienard-Weichert potentials and radiation, radiating systems, classical electron theory, relativistic electrodynamics. Lectures only. (6 credits)

PHYSICS N-465
Nuclear Physics I

Prerequisite: Physics N-364 or equivalent. Discussion of nuclear properties, deuteron, scattering, nuclear models, nuclear disintegrations, nuclear reactions, elementary particles and cosmic rays. Lectures only. (3 credits). *NOTE A/see § 200.4. See Physics N-495 for associated laboratory course.*

PHYSICS N-467
Solid State Physics

Prerequisite: Physics N-364 or equivalent or Physics N-477. Crystal structure, crystal binding, phonons and lattice vibrations, free electron fermi gas, energy bands, semiconductor crystals, superconductivity, dielectric properties, survey of magnetic properties, magnetic resonance, optical phenomena in insulators. Lectures only. (3 credits).

PHYSICS N-477
Quantum Mechanics I

Prerequisite: Mathematics N-270 or Phys. N-241 or N-336. State functions and their interpretation, linear momentum, motion of a free particle, Schrodinger's equation. Lectures only. (3 credits). *NOTE A/see* § 200.4.

PHYSICS N-478 (Half of 472)
Quantum Mechanics II

Prerequisites: Physics N-477 and N-241 or equivalent. States of a particle in one dimension, approximation methods, systems of particles in one dimension, motion in three dimensions, angular momentum and spin. Lectures only. (3 credits). *NOTE A/see § 200.4.*

PHYSICS N-480
Biophysics I

Prerequisite: University II standing in biology, physics or biochemistry or permission of the Department. The course is introduced by briefly describing the state of knowledge on how life systems originated. The role of light, sound, electricity and magnetism in various physiological processes is studied. Practical applications. Lectures and laboratory. (4 credits). *NOTE A/see § 200.4.*

PHYSICS N-481 (481)
Biophysics

This course is no longer offered. It is replaced by Physics N-480.

PHYSICS N-482
Biophysics II

Prerequisite: Physics N-480 or N-481 or permission of the Department. Biological oscillations on a biochemical, cellular, organ level will be treated and mathematical models will be explained. Cybernetics will be introduced and simple applications to physiological control systems given. Mechanics will be applied to the problems of form and locomotion. Irreversible thermodynamics will be applied to the problem of growth. Cancer from a biophysical viewpoint will be studied. Lectures and laboratory. (4 credits).

PHYSICS N-493
Experimental Thermodynamics I

Prerequisite: Physics N-433 previously or concurrently. A laboratory course in thermodynamics. Experiments include Clement and Desormes experiment, vaporisation, specific heats, liquid nitrogen boiling. Laboratory only. 10 experiments. (1 credit). *NOTE A/see § 200.4.*

PHYSICS N-495
Experimental Nuclear Physics I

Prerequisite: Physics N-394 and N-465 previously or concurrently. A laboratory course in nuclear physics. Experiments include gamma and beta ray spectroscopy, nuclear magnetic resonance, absolute counting, half-life determination, nuclear activities. Laboratory only, 10 experiments. (1 credit). NOTE A/see § 200.4.

PHYSICS N-496 (491)
Methods of Experimental Physics

Prerequisites: Physics N-395 or equivalent and N-394 or equivalent or permission of the Department. Experiments include fundamentals of digital logic and applications of operational amplifiers, solid state and nuclear physics. Students are encouraged to propose new experiments and will have the opportunity to design and build equipment. Laboratory only. (4 credits).

This course was given in the summer of 1973:

PHYSICS N-215 (215)
Physics for High School Teachers

91.13 Psychology (BSc)

91.13.1 PROGRAMMES (BSc)

Students are responsible for satisfying their particular degree requirements, hence the following sequence *must* be read in conjunction with § 91.3, 91.4.

NOTE: The superscript on a course number represents its credit value.

Psychology: Honours (BSc)

The following courses constitute an honours programme in Psychology, provided the student maintains the required academic standing.

First Year:
Psychology N-241[6] or N-242[6], N-273[6] (see *NOTE*). N-412[6].

(Second Year:
18 credits chosen from Psychology N-421[6], N-422[6], N-432[6], N-434[6], N-438[6], N-461[6], In addition N-375[3] may be taken as an option

Third Year:
Psychology N-413, N-472[6], and 6 additional credits selected from Psychology N-421[6], N-422[6], N-428[6], N-432[6], N-434[6], N-442[6], N-452[6], N-454[6], N-461[6], N-462[6], N-481[6], N-482[6], N-491[3], N-492[3], N-492[3], N-494[3].

NOTE: Students who have taken Psychology N-271 in first year and are then admitted to the honours programme will be exempt from Psychology N-273 but may be required to take Psychology N-471 in second year.

In addition:

Biology Option

Year I
Biology N-203[3], Zoology N-215[3], Chemistry N-231[6].

Year II
Biology N-224[3].

Year III
Zoology N-320[6].

Mathematics Option

Mathematics N-241[6], N-281[6], twelve credits from among Mathematics N-261[6], N-270[6], N-341[3], N-343[3], N-351[3], N-352[3], Computer Science N-211[3], N-221[3].

Psychology: Specialization (BSc)

The following courses, in an approved sequence, constitute a specialization in Psychology.

Year I
Psychology N-271[6], or N-273[6], N-412[6].

Year I or II
Psychology N-241[6] or N-242[6].

Year II or III
Psychology N-461[6], twelve credits chosen from among Psychology N-421[6], N-422[6], N-428[6], N-434[6], N-438[6], N-462[6].

Year III
Psychology N-471[6] or equivalent, and six additional credits in Psychology chosen in consultation with the Department. In addition either Zoology N-215[3], Biology N-203[3], Chemistry N-231[6] or twelve credits from Mathematics N-241[6], N-281[6], Computer Science N-211[3], N-221[3].

Psychology: Major (BSc)

The following courses, in an approved sequence, constitute a major in Psychology.

Year I
Psychology N-271[6], or N-273[6], N-412[6].

Year II and III
Psychology N-461[6], twelve credits chosen from among Psychology N-421[6], N-422[6], N-432[6], N-434[6], N-438[6], N-462[3], N-491[3], N-492[3], N-493[3]. N-494[3], six credits in Psychology.

Psychology: Minor (BSc)

The following courses constitute a minor programme in Psychology.

Year I
Psychology N-271[6].

Year II and III
Psychology N-461[6], twelve credits from among Psychology N-421[6], N-422[6], N-432[6], N-434[6], N-462[6], N-491[3], N-492[3], N-493[3], N-494[3].

91.13.2 COURSE DESCRIPTIONS

The courses in Psychology listed below are acceptable as science credits in the Bachelor of Science degree. Course descriptions can be found in the Sir George Williams Faculty of Arts § 41.26.

PSYCHOLOGY N-241 (6 credits)
Statistical Methods in Psychology A

PSYCHOLOGY N-242 (6 credits)
Statistical Methods in Psychology B

PSYCHOLOGY N-271 (6 credits)
Experimental Psychology 1A

PSYCHOLOGY N-273 (6 credits)
Experimental Psychology 1B

PSYCHOLOGY N-375 (3 credits)
Directed Study and Research on a Selected Topic

PSYCHOLOGY N-421 (6 credits)
Learning

PSYCHOLOGY N-422 (6 credits)
Motivation

PSYCHOLOGY N-428 (6 credits)
Measurement

PSYCHOLOGY N-432 (6 credits)
Perception

PSYCHOLOGY N-434 (6 credits)
Cognitive Processes

PSYCHOLOGY N-438 (6 credits)
Developmental Psychology

PSYCHOLOGY N-442 (6 credits)
Social Psychology

PSYCHOLOGY N-452 (6 credits)
Personality

PSYCHOLOGY N-454 (6 credits)
Behaviour Disorders

PSYCHOLOGY N-461 (6 credits)
Physiological Psychology

PSYCHOLOGY N-462 (6 credits)
Comparative Psychology

PSYCHOLOGY N-471 (6 credits)
Experimental Psychology II

PSYCHOLOGY N-472 (6 credits)
Advanced Experimental Problems

PSYCHOLOGY N-491 (492) (3 credits)
Special Seminar on a Selected Topic

PSYCHOLOGY N-493 (494) (3 credits)
Special Seminar on a Selected Topic

111 Older Student Programme

Loyola Campus

Mature Student Qualifying Programme

Sir George Williams Campus

111.1 Older Student Programme
Loyola Campus

111.1.1 ADMISSION REQUIREMENTS

Minimum Age Requirement

Candidates must be at least twenty-one years of age within the calendar year in which they enter the programme. A birth certificate or other acceptable proof of age must be submitted in support of the application for admission.

Language Proficiency

The university assumes that students whose first language is other than English and who have had all or part of their secondary schooling in another language will have assessed their ability to cope with a programme where the language of instruction is English. No special adjustments can be made in the case of students unable to continue in their programmes through lack of English language proficiency.

Admission with Advanced Placement

Applicants who have attended a senior matriculation programme, college, university and/or other equivalent institutions of higher learning are required to have their records of study submitted to the Office of Admissions even though no credits may have been earned at an institution. Two copies of each transcript are required. Former CEGEP, university, and other such transcripts are not to be submitted by the student but must be sent directly to this office from the Registrar of the previous institution. Although an applicant's records from several institutions may be summarized on one transcript, an applicant will not be considered until two official transcripts from each institution attended have been received. Readable photocopies of senior matriculation results are acceptable.

Each request for transfer credits will be considered on its own merits. It should be noted that certain conditions are attached to the granting of credits for courses completed elsewhere.

Tests

Applicants to the Older Student programme are not normally required to write entrance tests.

111.1.2 PROGRAMME STRUCTURES

Students will register in one of five programmes: Pre-Arts, Pre-Fine Arts, Pre-Commerce, Pre-Engineering or Pre-Science.

The programme for Older Students is considered as the equivalent of 126 credits and all Older Students upon entrance must consult with the Chairman prior to Registration. This programme is now under review and is subject to change.

The following breakdown of courses is recommended for students in their first year of study.

a) Arts & Fine Arts:

6	Eng
6	Math/Sc Elec
24	Elec

b) Commerce: 36 electives, but the following is recommended: The sequence of selecting these courses to be decided in consultation with the Department Chairman.
(For course description see § 61)

Accountancy

12	Math 101Z, 310Z
6	Ec 300Z
18	Elec

Business Administration

12	Math 101Z, 310Z
6	Ec 300Z
18	Elec

Computer Science

12	Math 101Z, 310Z
6	Ec 300Z
18	Elec

Economics

6	Math 101Z
6	Ec 300Z
24	Elec

c) Science:*
The sequence of selecting these courses to be decided in consultation with the Department Chairman.
(For course descriptions see § 51)

Bio-Physical Education

6	Biol 230Z
6	Chem 112Z
6	Math 133A and 135B
6	Phys 101
12	Elec

Biology

6	Biol 230Z
6	Chem 112Z
6	Math 133A & 135B
6	Phys 101Z
12	Elec

Chemistry

6 Chem 112Z
12 Math 133A, 135B, 231A & 233B
6 Phys 101Z
12 Elec

Computer Science

6 Comp Sc 211A & 241B
12 Math 133A, 135B, 231A & 233B
18 Elec

Mathematics

6 Chem 112Z
12 Maths 133A, 135B, 231A, 233B
6 Phys 101Z
12 Elec

Physics

6 Chem 122Z
12 Math 133A, 135B, 231A & 233B
6 Phys 101Z
12 Elec

Psychology

6 Biol 230Z
6 Chem 112Z
12 Math 133A, 135B, 231A & 233B
6 Phys 101Z
6 Elec

**It is recommended that a mathematics courses be taken during the summer prior to registration. Please consult your Department Chairman.*

d) Engineering: Please consult with the Dean of Engineering or his representative.

111.2 Mature Student Qualifying Programme Sir George Williams Campus

111.2.1 INTRODUCTION

In keeping with the traditional open policy of the university towards older students, the Mature Student Programme is designed to enable students who are twenty-one years of age or older to prepare themselves for entry to the post-CEGEP undergraduate programmes. The university assumes that the age of the students will have allowed them to acquire informally some of the general education given to younger students in CEGEP, and as a result the Mature Programme concentrates on the knowledge and skills which will be needed to undertake a given undergraduate programme.

Successful completion of the 36 credit programmes will make the students admissible to the 90 credit or three-year undergraduate programmes.

Once admitted to an undergraduate programme, the mature student is considered in every way a regularly admitted student.

Mature Entry Plan (25 and over)

There is a special Mature Entry Plan for students who become at least 25 years of age within the calendar year in which they enter the university. Refer to §111.2.5

Administrative Structure

Students will register in one of six pro grammes — Pre-Arts, (including Fine-Arts), Pre-Commerce, Pre-Science, Pre-Engineering or Pre-Computer Science. There is no separate administrative structure for the Mature Student Programme. Each faculty is responsible for its own programme and each academic department for the courses which it offers.

111.2.2 ADMISSION REQUIREMENTS

Minimum Age Requirement

Candidates must be at least twenty-one years of age within the calendar year in which they enter the programme. A birth certificate or other acceptable proof of age must be submitted in support of the application for admission.

Language Proficiency

The university assumes that students whose first language is other than English and who have had all or part of their secondary schooling in another language will have assessed their ability to cope with a programme where the language of instruction is English. No special adjustments can be made in the case of students unable to continue in their programmes through lack of English language proficiency.

Sir George Williams English Language Diagnostic Test

Students who are entering a programme calling for a required English course must take this English language diagnostic test prior to registration in order to determine the English course best suited to their needs.

Students entering a programme which does not have a required English course are not obliged to take the language diagnostic test. However, they are encouraged to do so as they may wish to enroll in an English course that would be helpfull to them.

Non-English students may repeat English 100 or English 101 once only. If unsuccessful on repetition of the course, they will substitute a course in another discipline. No further courses will be required of them.

Admission with Advanced Placement

Applicants who have attended a senior matriculation programme, college, university and/or other equivalent institutions of higher learning are required to have their records of study submitted to the Office of Admissions even though no credits may have been earned at an institution. Two copies of each transcript are required. Former CEGEP, university, and other such transcripts are not to be submitted by the student but must be sent directly to this office from the Registrar of the previous institution. Although an applicant's records from several institutions may be summarized on one transcript, an applicant will not be considered until two official transcripts from each institution attended have been received. Readable photocopies of senior matriculation results are acceptable.

Each request for transfer credits will be considered on its own merits. It should be noted that certain conditions are attached to the granting of credits for courses complete elsewhere.

Criteria for Admission

Applicants to the Mature Student Programme are not required to write entrance tests, unless requested.

Each application will be considered on its own merit.

Application for Admission

It is recommended that application for admission be made as early as possible on forms provided by the Office of Admissions. Academic certificates and other supporting documents not available at the time of application must be submitted as soon as they become available. Applicants are advised to

apply early in order to allow sufficient time for evaluation and review of their application by the office of Admissions. Final dates for the receipt of applications may be obtained by contacting the Office of Admissions.

Entry Dates

Students are admitted as Day students (full-time programmes of study) in September and January. Evening students are admitted in September, January and June. Day students are also admitted to the Loyola Campus in June for Summer School, Day or Evening.

111.2.3 ADDITIONAL INFORMATION

1. Students registered in the 36 credit Mature Student Programme will have the option, on reaching their 25th birthday, of profiting from the provisions of the Mature Entry Plan (25 and over),

2. Courses completed as part of the mature programme will not be transferred to the undergraduate programme.

3. Those admitted to the undergraduate programme under the Mature Entry Plan will not be permitted to apply for any pro tanto credits in the undergraduate programme on the basis of any former records of study which would normally be used as a basis for admission.

NOTE: For information on regulations, fees, student services, guidance services, etc., see the appropriate sections of this calendar.

111.2.4 PROGRAMME STRUCTURE

Students will register in one of the following programmes: Pre-Arts (including Fine Arts). Pre-Science, Pre-Commerce, Pre-Engineering. Programmes will consist of required courses and electives. Requirements of the various programmes are as follows.

NOTE: The superscript on a course designates it's credit value.

1. Pre-Arts (including Fine Arts).

General requirements:

Six credits in English (language or literature) and thirty credits, not more than eighteen of which may be taken outside the Faculty of Arts.

Specific requirements for programmes in Arts

a. Anthropology. Applied Social Science, Geography, Sociology, Urban Studies: six credits in Mathematics.
   NOTE: It is strongly recommended that students planning to specialize in Economics take Mathematics 103[3] and 105[3].
b. Art: twelve credits in studio work, six credits in Art History, and six additional credits in Cinema. Music or Theatre Arts.
c. Cinema, English, French, Theatre Arts: six credits in English Literature (in addition to the general requirement) and six credits in French.
d. German, Greek, Hebrew, Italian, Latin, Russian, Spanigh: At least six and preferably twelve credits in the language (s) to be studied.
e. Canadian Studies, Education, History. Humanities of Science, Philosophy, Russian Studies, Religion: no special requirements, but students should consult with the appropriate department chairman or programme coordinator.
f. one full course in Mathematics and Biology 001 (CEGEP 301 or 921) and Psychology 011 (CEGEP 101 and 201)

2. Pre-Science

Mathematics 102[3], 103[3], 104[3], 105[3]; Biology 101[3], Chemistry 101[3], 102[3]; Physics 104[3], 105[3], 106[3], 124[1], 125[1], 126[1]; 3 elective credits.

Mathematics 101[3] is required of those not having High School intermediate mathematics (functions).

Where taking this course will count towards the elective credits. Computer Science 111[3] is recommended as an elective.

3. Pre-Engineering

As for Pre-Science, but replacing Biology 101[3] with Computer Science 111[3].

4. Pre-Commerce

Mathematics 102[3] and 103[3]

6 credits in English (language or literature)

6 credits in Humanities or Social Science

an additional 18 credits selected from any Faculty

Candidates entering Pre-Commerce without high school intermediate mathematics (functions) must also take Mathematics 101[3], which course will apply as a 3-credit elective.

Pre-Commerce students are advised to select Economics 109[3] and 110[3] as electives.

5. Pre-Computer Science

The requirements for the General Science and Electronics/Systems Options shall be the same as those for Pre-Engineering. For the General Business Option they shall comprise: Mathematics 102[3], 103[3], 104[3], 105[3] and 106[3]; Computer Science 111[3]; eighteen elective credits.

111.2.5 MATURE ENTRY PLAN (25 AND OVER)

Science, Engineering and Computer Science

Persons entering Science, Engineering and Computer Science may be permitted to seek exemptions from part or all of the qualifying programme on the basis of their knowledge. In the case of the General Business option in Computer Science, this involves the Mathematics courses normally required for entry to that programme.

Engineering and Computer Science: Will offer a special testing programme to establish exemptions.

Science: Will interview and/or test candidates to determine exemptions.

Arts, Fine Arts and Commerce

Students wishing to enter Arts (including Fine Arts) or Commerce must qualify for admission to the undergraduate programme by successfully completing an 18 credit qualifying programme. These qualifying courses will not apply towards the undergraduate programme.

Arts (including Fine Arts): six credits in English (Composition or Literature) plus 12 additional credits selected from any faculty.

Commerce: Mathematics (College Algebra and Calculus I). The remainder of 18 credits selected from any faculty.

Candidates entering Pre-Commerce without high school Intermediate Mathematics (Functions) must also take Functions,

MATURE STUDENT QUALIFYING PROGRAMME SWG 111.2.5

MATURE ENTRY PLAN (25 AND OVER)

which course will apply as an elective. Pre-Commerce students are recommended to elect Introductory Economics and a course from the Social Sciences to complete the 18 credit profile.

111.2.6 COURSES

Courses worth six credits are given from September to May; courses given from September to December, or from January to May are worth three credits. Both 6 credit and 3 credit courses will normally be offered in the Evening Summer session.

The courses listed below are offered by the respective faculties. Inclusion of a course in this list does not guarantee that it will be given every year.

NOTE: Descriptions for courses with an 'N' number will be found in the indicated sections.

SIR GEORGE WILLIAMS FACULTY OF ARTS

Courses are grouped under the respective headings of Interdisciplinary Studies*, Humanities and Social Sciences.

INTERDISCIPLINARY STUDIES § 41.11.9

INTERDISCIPLINARY STUDIES 101 (N-201)
Introduction to Science and Human Affairs I (3 credits)

INTERDISCIPLINARY STUDIES 102 (N-202)
Introduction to Science and Human Affairs II (3 credits)

INTERDISCIPLINARY STUDIES 110
Contemporary Image of Science I: The Physical Sciences

This course provides a general humanistic understanding of the physical sciences. The three main themes are man and the universe; the reality and unreality of matter and energy; man and the dynamic earth. (6 credits) *NOTE: Students who have credits for Natural Science 210 or Humanities of Science 010 or 210 may not take this course for credits.*

INTERDISCIPLINARY STUDIES 112
Contemporary Image of Science II: The Biological Sciences

This course provides a general humanistic understanding of the biological sciences. The three main themes are biology and evolutionary theory; evolution of life and man; man, ecology and society. (6 credits) *NOTE: Students who have credits for Natural Science 210 or Humanities of Science 010 or 210 may not take this course for credits.*

**Courses in Interdisciplinary Studies may be accepted as either Humanities or Social Science credits.*

INTERDISCIPLINARY STUDIES 121 (N-221)
Environmental Issues I
(3 credits)

INTERDISCIPLINARY STUDIES 122 (N-222)
Environmental Issues II
(3 credits)

Humanities

I CLASSICS § *41.13.1*

CLASSICS 121 (N-212)
History of Greece and Rome
(6 credits)

CLASSICS 141 (N-241)
Greek Literature in Translation
(3 credits)

CLASSICS 142 (N-242)
Latin Literature in Translation
(3 credits)

GREEK 110 (N-210)
Introductory Course in Greek
(6 credits)

GREEK 141 (N-241)
Greek Language and Literature
(6 credits)

LATIN 110 (N-210)
Beginner's Latin
(6 credits)

LATIN 140 (N-240)
Latin Composition and Translation
(6 credits)

LATIN 141 (N-341)
Latin Literature
(6 credits)

II MODERN LANGUAGES § *41.13.2*

LITERATURE IN TRANSLATION 150 (N-350)
Literature in Translation
(6 credits)

GERMAN 110 (N-210)
Introductory Course in German
(6 credits)

GERMAN 111 (N-311)
Advanced German Language and Stylistics
(6 credits)

GERMAN 115 (N-215)
German for Reading Knowledge
(6 credits)

GERMAN 141 (N-241)
German Language and Literature (Intermediate)
(6 credits)

HEBREW 110 (N-210)
Introductory Course in Hebrew
(6 credits)

HEBREW 141 (N-241)
Intermediate Course in Hebrew
(6 credits)

ITALIAN 110 (N-210)
Introductory Course in Italian
(6 credits)

ITALIAN 121 (N-221)
Italian Civilization
(6 credits)

ITALIAN 141 (N-241)
Intermediate Italian
(6 credits)

RUSSIAN 110 (N-210)
Introductory Course in Russian
(6 credits)

RUSSIAN 115 (N-215)
Reading Course in Russian
(6 credits)

RUSSIAN 131 (N-311)
Advanced Russian Language and Stylistics
(6 credits)

RUSSIAN 141 (N-241)
Intermediate Russian
(6 credits)

SPANISH 101 (N-201)
Introduction to Spanish I
(3 credits)

SPANISH 102 (N-202)
Introduction to Spanish II
(3 credits)

SPANISH 121 (N-221)
Spanish Civilization
(6 credits)

SPANISH 122 (N-222)
El ideario hispanoamericano
(6 credits)

SPANISH 141 (N-241)
Spanish Language and Literature (Intermediate)
(6 credits)

III LINGUISTICS § *41.13.3*

LINGUISTICS 121 (N-221)
Introduction to Linguistics
(6 credits)

ENGLISH § *41.14.2*

ENGLISH 111
The Communication of Ideas

A course in language skills and research techniques for the student who has reasonable control of his writing. The approach will be from the point of view of the writer who seeks a desired response from the audience to whom he addresses himself and of the researcher who must prepare a written account of his work for business or academic purposes. (6 credits)

ENGLISH 131
Basic Language Skills — Stage I

A course in English composition for students who need basic training in written and spoken English. Emphasis will be placed on grammar, sentence structure and other fundamentals of good usage. (3 credits)

ENGLISH 132
Basic Language Skills — Stage II

A course in language skills and research techniques for students who need basic training in the preparation of effective reports, term papers and other written accounts of their work for business and academic purposes. (3 credits)

ENGLISH 133
The Novel and the Short Story

Selections for study will be grouped around some major theme or idea of particular relevance to the world of today. Specific themes and reading lists will be chosen by individual instructors. (3 credits)

ENGLISH 134
Drama and Poetry

Selections for study will be grouped around some central theme of particular relevance to life in the present age. Specific themes and reading lists will be chosen by individual instructors. (3 credits)

ENGLISH 161 (N-231)
Introduction to Poetry
(3 credits)

ENGLISH 166 (N-232)
Short Fiction
(3 credits)

ESL § *41.12.1*

ESL 100
English Language

A course for students whose first language is other than English and who require additional training in order to achieve a level of expression acceptable to the university. The focus of the course is primarily on the development and improvement of writing skills. All candidates will be tested prior to entry. (6 credits)

ESL 101 (N-201)
English Language and Composition
(6 crédits)

French § *41.16.3*

FRENCH 101 (N-201)
Beginners' French (Language I)
(6 crédits)

FRANÇAIS 111 (N-211)
Langue II et composition élémentaire
(6 crédits)

FRANÇAIS 114 (N-214)
Langue III et composition
(6 crédits)

FRANÇAIS 121 (N-321)
Panorama de la littérature française
(6 crédits)

FRANÇAIS 122 (N-222)
La littérature française moderne
(6 crédits)

FRANÇAIS 131 (N-331)
Littérature et culture québécoise
(6 crédits)

HUMANITIES

HUMANITIES 110
General Course in Humanities

It is the purpose of this course to enlarge and enrich the student's comprehension of his cultural heritage by the study of man as a unique creative being. The sources for this study of man are drawn primarily from the fields of history, philosophy, religion, literature and the arts with a view toward examining those experiences and ideas of enduring power which have shaped the nature of modern man from the age of Greece to the present century. (6 credits)

PHILOSOPHY § *41.18.2*

PHILOSOPHY 110 (N-210)
Problems of Philosophy
(6 credits)

PHILOSOPHY 111 (N-211)
Philosophical Classics
(6 credits)

PHILOSOPHY 121 (N-221)
Introduction to Logic
(6 credits)

PHILOSOPHY 131 (N-231)
Problems of Morals
(6 credits)

PHILOSOPHY 171 (N-271)
Contemporary Philosophy
(6 credits)

PHILOSOPHY 173 (N-273)
Existentialism
(6 credits)

RELIGION § *41.19.2*

RELIGION 111 (N-211)
Understanding Religion
(6 credits)

RELIGION 113 (N-213)
Major Religious Traditions of the World
(6 credits)

RELIGION 129 (N-329)
Sefardic Judaism
(3 credits)

RELIGION 130 (N-331)
Contemporary Ethical Issues: Personal
(3 credits)

RELIGION 132 (N-332)
Contemporary Ethical Issues: Societal
(3 credits)

RELIGION 133 (N-333)
Women and Religion I
(3 credits)

RELIGION 134 (N-334)
Women and Religion II
(3 credits)

RELIGION 140 (N-341)
Religion and Literature
(6 credits)

MATURE STUDENT QUALIFYING PROGRAMME SGW
111.2.6
MATURE STUDENT QUALIFYING PROGRAMME SGW: COURSES

RELIGION 151 (N-301)
Biblical Studies I: The Hebrew Bible
(3 credits)

RELIGION 152 (N-302)
Biblical Studies II: The New Testament
(3 credits)

Social Sciences

ANTHROPOLOGY § *41.27.5*

ANTHROPOLOGY 111 (N-211)
Introduction to Anthropology
(6 credits)

ECONOMICS § *41.21.2*

ECONOMICS 109 (N-209)
Introduction to Microeconomics
(3 credits)

ECONOMICS 110 (N-210)
Introduction to Macroeconomics
(3 credits)

GEOGRAPHY § *41.23.2*

GEOGRAPHY 101
The Ecology of Man
A general introduction to the relationship between physical and cultural distributions of the earth's surface. Global pattern of human economic and natural resources will be examined. (6 credits)
NOTE: (Not offered in 1975-76)

GEOGRAPHY 111 (N-211)
Introduction to Human Geography
(6 credits)

GEOGRAPHY 160 (N-260)
Introduction to Cartography I
(3 credits)

GEOGRAPHY 161 (N-261)
Introduction to Cartography II
(3 credits)

GEOGRAPHY 171 (N-271)
Introduction to Physical Geography
(6 credits)

HISTORY § *41.24.2*

HISTORY 110 (N-210)
History of Europe in the Modern World
(6 credits)

HISTORY 121 (N-221)
History of Canada
(6 credits)

HISTORY 151 (N-251)
History of the United States
(6 credits)

HISTORY 161 (N-261)
History of Asia
(6 credits)

POLITICAL SCIENCE § *41.25.3*

POLITICAL SCIENCE 130 (N-330)
Government and Politics of Canada
(6 credits)

POLITICAL SCIENCE 131 (N-231)
Public law
(6 credits)

POLITICAL SCIENCE 140 (N-240)
Comparative Politics
(6 credits)

POLITICAL SCIENCE 170 (N-270)
International Relations
(6 credits)

PHYCHOLOGY § *41.26.2*

PSYCHOLOGY 111 (N-211)
Introductory Psychology
(6 credits)

SOCIAL SCIENCE

SOCIAL SCIENCE 101
Mass Media and Society
This course will study the history and contemporary communication systems and their effect on society. The press and broadcasting will be explored and emphasis will be placed on news reporting, propaganda, etc. The course consists of televised lectures, reading assignments, and class discussions. (3 credits)

SOCIAL SCIENCE 102
Public Communications in Canada
This course will study the history and development of Canadian broadcasting and the part it has played in the growth of the nation. Televised lectures, reading assignments and class discussions. (3 credits)

SOCIAL SCIENCE 110
General Course in the Social Sciences
This course has a dual purpose: to introduce the student to some of the basic concepts and subject matter the various social sciences and to demonstrate their interrelation; and to provide the student with some knowledge of contemporary society and the social problems which confront it. (6 credits)

SOCIOLOGY § *41.27.3*

SOCIOLOGY 111 (N-210)
Introduction to Sociology
(6 credits)

FACULTY OF FINE ARTS

VISUAL ART § *81.6.2*

ART 101
Visual Arts Orientation I
A studio course dealing with basic media, fundamental techniques and core concepts in two or three dimensions. Lectures and studio periods. (6 credits)

ART 102
Visual Arts Orientation II
Prerequisite: Art 101. Individual problems in the visual arts. Lectures and studio periods. (6 credits)

ART HISTORY § *81.7.2*

ART HISTORY 140 (N-240)
Introduction to Art History
(6 credits)

ART HISTORY 149 (N-249)
Canadian Sculpture and Architecture
(6 credits)

CINEMA § *81.8.2*

CINEMA 111 (N-211)
History of Films
(6 credits)

MUSIC § *81.9.2*

MUSIC 135 (N-235)
Musicianship
(6 credits)

MUSIC 145 (N-245)
Music History and Society
(6 credits)

SIR GEORGE WILLIAMS FACULTY OF SCIENCE

BIOLOGY 101
General Biology I
A survey of the general principles of biology; chemical basis of life, cell organization and control, elements of anatomy, physiology, morphogenesis, heredity and evolution. Lectures and laboratories. (3 credits)

BIOLOGY 102
General Biology II
Prerequisite: Biology 101. Cell biology, elementary biochemistry, developmental biology, physiology and genetics. Lectures and laboratories. (3 credits)

CHEMISTRY 101
General Chemistry I
States of matter. Atoms, elements and isotopes; atomic structures. The electronic structure of atoms. The Periodic Table and chemical bonding. Ions in solution. Lectures, tutorials and laboratories. (3 credits)

CHEMISTRY 102
General Chemistry II
Covalent compounds. Chemical reactions; mechanism and kinetics. Special topics; oriented either to the biological sciences, biochemistry and chemistry, or to the physical sciences, engineering and computer sciences. Lectures, tutorials and laboratories. (3 credits)

GEOLOGY § *91.10*

GEOLOGY 113 (N-213)
Introductory Geology I: Earth Materials
(3 credits)
This course is no longer offered

GEOLOGY 114 (N-214)
Introductory Geology II: Earth Processes
(3 credits)
This course is no longer offered.

GEOLOGY 115 (N-215)
Introductory Geology
(3 credits)

GEOLOGY 131 (N-231)
Mineralogy
(3 credits)

MATHEMATICS

General Prerequisite and Equivalents:
The general prerequisite for all Mature Student Qualifying Programme Mathematics courses is Mathematics 101. Students will be exempt from this course with high school papers in:
a) Albegra, Geometry, Trigonometry, Intermediate Algebra; or
b) Algebra, Geometry, Functions.
Students with good grades in Algebra, Geometry, Trigonometry may apply to the Mathematics Department for exemption.

MATHEMATICS 100
Fundamental Concepts of Algebra
This is a course designed for mature students who need a modern background for Mathematics 101. Sets, axiomatics, algebraic techniques, inequalities, analytic geometry of lines, circles, parabolas. (3 credits)

MATHEMATICS 101
Elementary Functions
Sets. Field of real numbers. Inequalities. Functions and graphs. Trigonometric, exponential and logarithmic functions. (3 credits)

MATHEMATICS 102
College Algebra
Pre-or-Co-requisite: Mathematics 101 or equivalent. (See "general prerequisite" above.) Proofs and implications. The natural numbers and the integers. Mathematical induction. Divisibility, the Euclidean Algorithm, primes, the Fundamental Theorem of Arithmetic Sequences and progressions. Complex Numbers, polynomials, the Fundamental Theorem of Algebra. Combinatorial Mathematics, the Binomial Theorem. Systems of equations, determinants, Cramers' Rule (3 credits)

MATHEMATICS 103
Differential and Integral Calculus I
Prerequisite: Mathematics 101 or equivalent. (See "general prerequisite" above.) Functional notation. Limits and continuity. Differentiation of polynomials. The power, product, quotient and chain rules. Implicit differentiation. Higher derivatives. Mean Value Theorem, Rolles' Theorem, Maxima and minima. Applications: tangents to plane curves, related rates. The differential, use in finding approximations. Indefinite and definite integrals, areas and volumes. (3 credits)

MATHEMATICS 104
Vector Analysis and Analytical Geometry
Prerequisite: Mathematics 101 or equivalent. (See "general prerequisite" above.) The Algebra of vectors in two and three dimensional Euclidean vector spaces, Inner and cross products of vectors. Algebraic and vector equations of curves in the plane and in space, Elementary study of surfaces in space. Curves and surfaces in parametric form. Polar, spherical and cylindrical coordinates. (3 credits)

MATHEMATICS 105
Differential and Integral Calculus II
Prerequisite: Mathematics 103. Differentiation and integration of trigonometric functions. Derivatives of inverse trigonometric functions. Logarithmic functions and exponential functions. Methods of integration by parts, by substitution, by separation into partial fractions. Improper integrals. L'Hopital's theorem. Series: Convergency tests, Maclaurin and Taylor theorems. (3 credits)

MATHEMATICS 106
Linear Algebra for the Social Sciences
Prerequisite: Mathematics 102. Operations on Matrices. Determinants, Cramer's rule. Systems, rank. The inverse matrix. The Gauss Jordan method. Mappings, matrix transformation. Linear transformations. Characteristic value, vectors, Quadratic forms. (3 credits)

MATHEMATICS 107
Statistics for the Social Sciences
Prerequisite: Mathematics 101 or permission of Department (See "general prerequisite" above.) Elementary Probability, permutations and combinations. Binomial and normal distribution. Analysis and organization of Statistical data. Tests of hypotheses. Confidence limits. Introduction into linear regression and correlation. (3 credits)

MATHEMATICS 108
Fundamental Mathematics I
Prerequisite: Mathematics 101 or equivalent. This course is intended primarily for pre-Commerce students. Progressions, compound interest, annuities; permutations, combinations and binomial theorem; systems of linear equations, inequalities, linear programming; matrices. (3 credits

NOTE: Students with credits for Mathematics 102 or equivalent may not take this course for credits.

MATHEMATICS 109
Fundamental Mathematics II
Prerequisite: Mathematics 101 or equivalent. This course is intended primarily for pre-Commerce students. Limits, differentiation of rational, exponential and logarithmic functions, theory of maxima and minima.

PHYSICS 104
Mechanics
Prerequisite: Mathematics 103 previously or concurrently. Kinematics, Newton's Laws of Motion. Statics, dynamics. Conservation of momentum and energy. Periodic motion. Lectures only. (3 credits)

NOTE: See Physics 124 for laboratory associated with this course.
NOTE: Students with credits in Physics 101 or equivalent may not take this course for credits.

PHYSICS 105
Electricity and Magnetism
Prerequisite: Physics 104. Electrical charge

and Coulomb's Law. Electrical field and potential Capacity. Steady state and transient currents. Electromagnetic induction and alternating currents. Lectures only. (3 credits)

NOTE: See Physics 125 for laboratory associated with this course.
NOTE: Students with credits in Physics 102 or equivalent may not take this course for credits.

PHYSICS 106
Waves and Modern Physics

Prerequisite: Physics 104. Simple harmonic motion. Wave propagation. Superposition. Stationary waves. Doppler effect. Interference. Diffraction. Photoelectric effect. Compton effect. Bohr's atom. Radioactivity, fission, fusion. Lectures only. (3 credits)

NOTE: See Physics 126 for laboratory associated with this course.
NOTE: Students with credits for Physics 103 or equivalent may not take this course for credits.

PHYSICS 110
Discoveries in Physics

A non-mathematical course in physics specifically designed for students who have had little or no experience in physics. It traces the fundamental ideas from which modern physics has emerged and attempts to develop insights into the understanding of natural phenomena. Lectures only. (6 credits)

PHYSICS 124
Introductory Experimental Mechanics

Prerequisite: Physics 104 previously or concurrently or permission of the Department. A laboratory course covering fundamental experiments in classical mechanics. Experiments will include resolution of forces, centrifugal force and conservation of energy, pendulums. Laboratory only, 10 experiments. (1 credit)

NOTE: Students who have credits in Physics 101 or equivalent may not take this course for credit.

PHYSICS 125
Introductory Experimental Electricity

Prerequisite: Physics 105 previously or concurrently or permission of the Department. A laboratory course covering fundamental experiments in electricity. Experiments will include Kirchoff's Law, resistors in series and parallel, oscilloscopes, induction, AC. Laboratory only, 10 experiments. (1 credit)

NOTE: Students with credits in Physics 102 or equivalent may not take this course for credit.

PHYSICS 126
Introductory Experimental Waves and Modern Physics

Prerequisite: Physics 106 previously or concurrently or permission of the Department. A laboratory course covering the fundamental experiments in waves and modern physics. Experiments include spectrometer measurements. Newton's rings and measurements involving radioactivity. Laboratory only, 10 experiments. (1 credit)

NOTE: Students with credits in Physics 103 or equivalent may not take this course for credit.

FACULTY OF COMMERCE & ADMINISTRATION

ADMINISTRATION 101
Introduction to Administration

This course is designed to develop a basic understanding of the role of administration in our society (the efficient organization and employment of people in the technostructure). (3 credits)

ADMINISTRATION 102
Perspective on Business

This course is designed to review the historical development of business (in Canada in particular) and to examine the relationships between the firm (management) and the owners, the employees, the customers, the government and the community. Further, to study some of the problems facing Canadian business today: the dehumanizing aspect, pollution problems, large vs. small firms, foreign ownership, competition, etc. (3 credits)

FACULTY OF ENGINEERING

COMPUTER SCIENCE § 71
COMPUTER SCIENCE III (211)
Introduction to Digital Computer Programming
(3 credits)

111.3 INDEPENDENT COURSE STUDENTS

Where places are available, after regularly admitted students have been registered, individuals may register on an individual course basis as independent students in courses for which they have the qualifications. Registration dates will be published in the daily press in the month of August.

111.4 SIR GEORGE WILLIAMS HIGH SCHOOL

Applicants to the Mature Student Qualifying Programme who wish to correct deficiencies in certain disciplines in which they did not matriculate from high school, (for example, Elementary Mathematics), should register for courses in the Sir George Williams Evening High School. Inquiries concerning the High School should be directed to the Headmaster, Sir George Williams High School, 1435 Drummond Street, Montreal, Quebec.

121 Loyola Evening Division

121.1 Loyola Evening Division

Director
D. J. POTVIN

Assistant Director — Administrative
D. BATES

Assistant to the Director
M. ALLEN

Assistant to the Director
N. BATTIS

Assistant to the Director
W. COZENS

121.2 General Information

Application

An application form must be submitted by all former students who have not registered since the 1974 Summer Session and by all students who are applying for the first time.

Registration

All students must register before attending class.

Former students will be permitted to register upon presentation of a registration form which is mailed with the calendar.

New students will be permitted to register upon presentation of a registration form that will be mailed after the application form has been processed.

Evening Division Office

The office of the Evening Division is located at 7270 Sherbrooke Street West. The office is open from 9:00 a.m. until 9:00 p.m. from Monday to Thursday and from 9:00 a.m. until 5:00 p.m. on Friday. Consultations are available by appointment.

All enquiries and formal applications should be addressed to:

Evening Divison, Loyola Campus
Concordia University
7270 Sherbrooke St. West
Montreal, Quebec H4B 1R6
Tel.: 482-0320 — Local 700

Fees

All fees must be paid at the time of registration.

Fees must be paid in cash, by money orders or by certified cheques.

Students will not be registered and will not be permitted to attend classes until they have received their student admission form.

All forms and accounts are subject to revision for adjustment or error.

POSTDATED CHEQUES WILL NOT BE ACCEPTED.

121.2.1 MISCELLANEOUS PROCEDURES

Course Changes

Course changes and section changes will be permitted prior to the third scheduled class. A fee of $5.00 is charged for each change of a course or change of a course section. No change will be permitted after the third scheduled class. Change of course forms must be completed in the Evening Division Office.

Withdrawals

Students may withdraw from a course by completing a form in the Evening Division Office. No withdrawals will be accepted by telephone and absenteeism does not constitute a withdrawal.

Students may withdraw from a course prior to the third scheduled class and receive a refund as outline:

Prior to the 2nd scheduled class 50%
Prior to the 3rd scheduled class 25%
After the 3rd scheduled class .. No refund

Students withdrawing from a course after this date but before the last date for withdrawing from a course will have their academic record adjusted to indicate the withdrawal.

Students who do not formally withdraw will receive a term mark or a DNW (did not write) on their academic record.

Change of Address

All changes of address should be forwarded in writing to the Evening Division Office.

Day Students

Day students may register for courses in the Evening Division at the time of Day Registration. The Day Registration form must clearly indicate that the course is scheduled through the Evening Division.

All course changes and withdrawals must be made through the Day Division offices.

Day students wishing to register for courses during the Summer Session must obtain a signed form from the Dean of their Faculty or from the Chairman of their Department.

The student's copy of this form will be the authorization to register in the Evening Division on the date specified on the form.

Evening Students Taking Courses in the Day Division

Evening students with degree status may

apply to take courses in the Day Division during the Winter Session.

A special form, available in the Evening Division Office, must be completed and returned by August 15th.

Students will be advised by mail regarding permission to register for Day courses.

Registration for these courses will take place at the scheduled Evening Division Registration.

All course changes and withdrawals must be made through the Evening Division Office.

Day Students Transferring to the Evening Division

Day students who wish to transfer to the Evening Division must complete and Evening Division application form and submit a transcript of marks from the Day Division.

Evening Students Transferring to the Day Division

Evening students with degree classification who have completed courses appropriate to their programme may request a transfer to the Day Division.

Application must be made directly to the Day Division Admissions offices and notification of acceptance will be made to the student by the Day Division.

121.3 Classification of Students

Students in the Evening Division will be classified as *degree* or *non-degree*.

1. Degree

Degree students are those who meet all admission requirements and proceed to a degree.

Qualifying students are those who intend to proceed to a degree but who, at the time of registration, do not meet all of the admission requirements. Qualifying students will be changed to degree students when 24 of the first 30 credits for which they register have been passed. They will receive credit for all courses successfully completed. Qualifying students may be changed to probationary students if they do not pass 24 of the first 30 credits for which they register.

QUALIFYING STUDENTS MAY REGISTER FOR NO MORE THAN 12 CREDITS DURING THEIR FIRST SESSION.

Probationary students are those whose academic background indicates that a more prolonged period of serious study is necessary before degree status is granted. Probationary students will be changed to degree status when 36 credits are obtained after having registered in no more than 54 credits.

2. Non-Degree

Independent students are those who do not intend to proceed to a degree at the time of registration. Independent students will include the following:

(i) guest students: students proceeding to a degree at some other institution and authorized by that institution to take specific courses in the Evening Division.

(ii) students taking courses for the purpose of obtaining a certificate or diploma from a professional organization and authorized by the organization to pursue their studies in the Evening Division.

(iii) students with suitable background taking courses for their own interest and personal satisfaction.

Independent students have no standing towards a degree at Loyola but whenever qualified to do so, they may claim degree status, transfer to a degree programme and receive credits for courses successfully completed.

Course Load

Students who wish to register for more than 12 credits in a Session must obtain approval from an Assistant Director at the time of registration.

Graduation

A list of potential graduates is posted on the notice boards. Students who are potential graduates at the end of the session and whose name is not listed should contact the Assistant Director of the Evening Division. Information regarding the logistics of graduation will be forwarded by the Graduation Committee.

Awards

The Evening Division Medal is granted to the graduating student from the Evening Division with the highest average for the courses taken at Loyola. Normally, a student must have completed 60 credits at university level in the Evening Division to be eligible for this award.

In co-operation with the Loyola Evening Students' Association and through the Office of the Director of the Evening Division, the Loyola Evening Students' Association Medal is awarded to the student with the highest academic rank in each of the Faculties — Arts, Commerce and Science. Students who have completed at least 60 credits at university level as a registered Evening Division student and who have an average of not less than 70% may qualify.

Transcripts

Official transcripts will be forwarded upon request by the student. The cost of each transcript is $1.00. Transcript request forms are available in the Evening Division Office. No request will be accepted by telephone. Students are advised that a minimum two-week period is required before requests can be processed and transcripts forwarded.

Scholarships and Bursaries

The Evening Division Scholarship Committee is composed of representatives from the Loyola Evening Students' Association, the Dean of Students Office, the Faculty of the Evening Division, and the staff of the Evening Division Office. Financial assistance may be provided to students who can demonstrate sufficient need. Scholarships may be offered to students whose academic performance in the Evening Division is outstanding.

Criteria for Obtaining Bursaries and Loans:

a) be classified as a Degree student in the Evening Division;
b) have completed courses during at least one session as an Evening Student;
c) be able to demonstrate financial need;
d) have submitted a written request three weeks prior to the regular registration dates.

All requests for assistance must be made to the Director of the Evening Division at least three weeks prior to the *Regular Registration Dates*.

Class Cancellations

Through the co-operation of Radio Station

CFCF and Radio Station CJAD, an announcement of all cancelled classes that have been reported to the office will be made at the following times each day: Radio Station CFCF — between 4:00 and 6:00 p.m.

Radio Station CJAD — between 4:00 and 6:00 p.m.

The Evening Division Office and Radio Stations CFCF and CJAD accept no responsibility for cancelled classes which have not been announced.

The Loyola Evening Students' Association Inc.

In march of 1973, the Loyola Evening Students' Association (L.E.S.A.) was incorporated under a Quebec provincial charter. During the same period, the Association Constitution was revised to better reflect changes in Evening Student objectives since the last major change in 1969.

Objectives

The Association has, as its stated objectives:

1) The representation, promotion, and furtherance of the academic interests of Loyola of Montreal Evening Students.

2) The encouragement of the Evening Division Students to participate actively in the Loyola community.

Organization

Through a system of class representatives, elected in the first two weeks of the Winter Session, and an Association Council (a six member Executive and six general Coordinators) elected in March of each year, present and future needs of Evening Students can be identified and acted upon.

Activities

Within the framework of Loyola, members of Council serve as representatives on the main Concordia Administrative Councils.

Council believes it of great importance to maintain a strong representation on these committees as this participation is considered one of the most effective means of advancing Evening Student aims to the Administration.

A further strengthening of L.E.S.A. as an Evening Student body is seen in its participation in an organization of part-time university students.

Meetings and Information

The primary concern of the Association is its member students. Council members may be contacted through the answering service at 488-4048 or in writing, addressed to 2501 West Broadway, Montreal H4B1R6.

They are also present at:

1) Registration — to assist students to the fullest extent possible.

2) Regular meeting — Agenda, etc. are posted on various bulletin boards throughout the campus.

3) Class representative meetings of which there are at least four per year, one of which is the annual general election in March, where Evening Students who are not class representatives may participate as non-voting members. Details are posted on bulletin boards.

Council Executive

The titles and functions of the Executive body of Council are detailed below, enabling students to address their queries to the specific officer responsible.

President
Vice-President (Academic)
Vice-President (Communications)
Vice-President (Operations)
Treasurer
Senator

121.4 Andragogy

Co-ordinator:
D. J. POTVIN

121.4.1 PROGRAMMES

42 BA Major in Andragogy

Years I, II & III
42 Andr electives

30 Certificate in Andragogy

15 Andr 300Z[6], 401B[3], 411A[3], 421B[3].
15 Andr electives.

121.4.2 ANDRAGOGY

The Bachelor of Arts with a Major in Andragogy is awarded after the completion of 90 credits, 42 of which are in Andragogy and 48 of which are electives.

The Certificate in Andragogy is awarded after the completion of 30 credits including: Introduction to Adult and Continuing Education, Andragogy 300Z[6]. Foundations of Adult Experience, Andragogy 421B[3]. Curriculum Development for Continuous Learning, Andragogy 411A[3]. The Evaluation of Adult Learning, Andragogy 401B[3].

The electives may be chosen from existing courses offered by the various academic departments provided that these courses have a practical or theoretical application to Adult Education. All electives must be approved by the Co-ordinator of the Programme. Registration in any Andragogy course is restricted to those who are actively engaged in the administration or teaching of adult learners.

Andragogy 300Z[6] is a prerequisite to all other courses in Andragogy.

121.4.3 COURSE DESCRIPTIONS

ANDRAGOGY 300Z
Introduction to Adult and Continuing Education

This course will consist of an overview of the field of adult and continuing education with emphasis given to the philosophy, objectives, nature of adult and continuing education, historical development, methods and techniques, and the nature of the adult learner. The course is conducted according to andragogical principles and practices which emphasize active student participation and self-directedness. *Prerequisite to other courses in Andragogy.* Text: Knowles, Malcolm. *The Modern Practices of Adult Education* (Association Press). (6 credits)

ANDRAGOGY 321
(Also given as Health Education 515)
Media Utilization
Media Utilization

This course surveys the various types of learning aids including equipment which educators may use. Types of equipment and materials, sources and costs will be covered along with applications to formal teaching situations and evaluations. (3 credits).

ANDRAGOGY 331
Techniques and Methods in Adult Education

This course is an opportunity for adult educators to practice and develop their skills in helping adult learners. Various models of teaching will be examined e.g. those growing out of social needs, action information processing, behaviour modification, non-directive counselling. Attention will be given to techniques useful in diagnosing learning needs, designing learning episodes, in small group discussions, role playing, conference design. Text: Kidd, J. R., *How Adults Learn*, Second Edition, 1974 (Association Press). (3 credits)

ANDRAGOGY 361
(Also given as Health Education 421 § 121.5.2.)
Personnel Interrelations

This course is designed to provide an orientation to the field of interpersonal relationships and human awareness, focusing particularly on relating to and working with other people. Concepts of personal growth and development will be highlighted. Conducted through weekly seminars. (3 credits).

ANDRAGOGY 401
The Evaluation of Adult Learning

Selected evaluation concepts and techniques and an indication of how they may be used to develop, improve and assess a continuing education course of instruction will be emphasized. Attention will be given to evaluation techniques that will provide the information necessary to improve a course of instruction while it is being planned and conducted. (3 credits)

ANDRAGOGY 411
Curriculum Development for Continuous Learning

The course will examine the philosophical and psychological underpinnings of the different models of adult curriculum planning. Students will have the opportunity to plan, carry out and evaluate a learning episode in order to evaluate the usefulness of a given model to their own planning style. (3 credits).

ANDRAGOGY 420Z
(Also given as Bio-PE 640 § 51.4.3 and Community Services 320, Nursing 320 § 121.5.2)
Dynamics of Interviewing and Counselling

A laboratory course in which the student ex-

amines the dynamics of interviewing, models of human effectiveness, and the theories of counselling, as well as the priciples of the helping relationship. Counselling techniques in staff relations and supervision will also be explored. The course demands a high level of observation, participation and involvement from each student. (6 credits).

ANDRAGOGY 421
Foundations of Adult Experience

The basic theme of the course will be the recognition of adulthood as a stage in the life process which has its own unique dynamics, the understanding of which is a pre-cursor to the development of curricula and pedagogical techniques in the field of adult and continuing education. Following a review of physical cognitive and affective processes in human development from infancy through adolescence, the course will focus on adult experience attempting to delineate the continuities and discontinuities of those processes. (3 credits).

ANDRAGOGY 431
Computers and Education

A basic introduction of the use of computers in education and the teaching of data processing subjects. The course surveys the following topics: computers, programming, computer operations, computer files, keypunches and on-line terminals, teaching EDP, CAI/CMI, development of EDP curriculum, information sources, flowcharting etc. No prerequisite knowledge or skill in data processing, science or mathematics is required. (3 credits).

ANDRAGOGY 441
Community Education and Adult Learning

This course will examine the use of community development — and change agent-models to implement adult education programmes which meet the life-long needs of individuals in communities. Particular attention will be paid to the applied processes of social and education change, citizen involvement, rural education, community skills and the use of film and VTR in community education. (3 credits).

ANDRAGOGY 500
Selected Topics in Andragogy
(6 credits).

ANDRAGOGY 311
Quebec's Education System
(3 credits).

ANDRAGOGY 521
Research Methodology
(3 credits).

121.5 Health Education

Director:
G. LENNOX
Curriculum Coordinator of Nursing Education:
SISTER M. BACHAND

121.5.1 PROGRAMMES

90 BA Specialization in Health Education-Community Nursing

Prerequisites: R.N.
45 Nurs 300[6], 310[6], 320[6], 330[6], 401 A/B[3], 407B[3], 504[6], 513 A/B[3]
15 Health Ed Electives
30 Electives

42 Certificate in Health Education Community Services

36 Cose 300[6], 310[6], 401 A/B[3], 408[6], 510[6], 513 A/B[3]
6 Health Ed Electives

90 BA Major in Health Education Community Nursing

Prerequisites: R.N.
45 Nurs 300[6], 310[6], 320[6], 330[6], 401 A/B[3], 407B[3], 504[6], 513 A/B[3]
45 Electives

45 Certificate in Health Education Community Nursing

45 Nurs 300[6], 310[6], 320[6], 330[6], 401 A/B[3], 407B[3], 440[6], 504[6], 513 A/B[3]

121.5.2 HEALTH EDUCATION PROGRAMMES

The Health Education Division offers Programmes and Courses designed for three groups of students.
I Registered nurses: in Community Nursing

II Students from various disciplines: (Health Education courses as electives)

III Individuals working in a community: courses dealing with community problems, and the role of the community workers

I Community Nursing Programmes
Purpose of the Programme

The programme in Community Nursing is designed to offer Continuing Education to experienced Registered Nurses working in community settings such as schools, industry, community clinics, doctor's offices, hospital services and other agencies. Consideration has been given to the nurses emerging role as a member of the multidisciplinary health team and her interests in the fields of the nurse parctitioner, health service administrator, health educator, and other specialities. Therefore, courses are designed for their relevance to society and professional needs in general, and to the needs of the student and consumer specifically. For this reason the following options are offered:
1) BA Major Community Nursing (90 credits) 45 of these credits must be in Nursing (taken sequentially), and the remaining 45 Electives.
2) BA Specialization Community Nursing (90 credits) 45 of these credits must be in Nursing (taken sequentially), 15 in Health Education and 30 Electives.
3) A certification may be granted to nurses having completed the 45 compulsory nursing credits. Students course of study are scheduled individually taking into consideration: academic background, professional experiences, areas of interest and time available. Acceptance may be on a full or part time basis. In the latter case, the student is expected to take at least one course per semester. Exceptions to this rule may be made with the approval of the Director.
Admission Requirements: The student must present:
1) a nursing diploma from an approved school of nursing.
2) an authorization to practice nursing issued by the Order of Nurses of Quebec or able to submit proof of current registration in the Province or country from which he/she comes.

3) for any nurse who graduated in 1972 or later, a written declaration from a hospital showing at least one full year of employment as a nurse and indicating the specific nature of that employment.
4) Where a student cannot submit prerequisite documentation, he/she may request the right to take a qualifying examination 3 weeks prior to registration.
5) Relevant transcripts should be submitted to the registrar's office well in advance of registration.

Grade

The students will be expected to obtain a grade of 65% in the nursing subjects in order to continue in the programme.

II Courses in Health Education

Courses are offered in the field of Health Education as electives for our students as well as for students of other disciplines.

III Certificate Programme in Community Service

These courses are offered to professionals employed in full time or as volunteers in health clinics, educational programmes, hospitals, and other community settings. The certificate will be granted upon successful completion of 42 credits, 36 of which are mandatory and the remaining 6 Health Education electives. The programme may be taken on a full or part-time basis. One course per semester is mandatory unless this is waived by the Director of Health Education. Students are required to maintain an average of 65% in order to continue in the programme.

NOTE: Alternative electives to Health Education courses may be accepted at the discretion of the Department of Health Education. Please consult the Director of the Programme for course counselling before registration.

NOTE: Should there not be sufficient registration, the University reserves the right to cancel any of the courses.

121.5.3 COURSE DESCRIPTIONS

NURSING 300Z
(Also given as Bio-PE 534 § 51.4.3 and Cose 300)
Nutrition in the 70's

This course will study the influence of socio-economic and political system on the nutritional status of the individual, and the interrelationship between food habits and the cultural, social and psychological aspects of life. Topics will include diet related problems such as obesity, heart disease, faulty eating habits, malnutrition. Food budgeting for all levels of the socio-economic structure will be examined. (6 credits)

NURSING 310Z
Pathophysiology

Prerequisite (s): Biology 300Z or successful completion of a qualifying exam. An applied physiology course as related to disease. The topics will cover the physiology of the red corpuscles and anemias, blood and circulation as related to heart disease, respiration, digestion, excretion, endocrines, reproduction, and the nervous system. Stress will be made on the application of physiology to the disease. (6 credits)

NURSING 320 (Also given as Andr. 420 § 121.4.3, Bio-PE 640 § 51.4.3, Cose 320
Dynamics of Interviewing & Counselling

Prerequisite (s): Introductory Psychology or Health Education 421. A laboratory course in which the student examines the dynamics of interviewing, models of human effectiveness, and theories of counselling, as well as the principles of the helping relationship. Counselling techniques in staff relations and supervision will also be explored. The course demands a high level of observation, participation and involvement from each student. (6 credits)

NURSING 330Z
Community Health Nursing

The nature of community health nursing practice requires that current knowledge derived from the biological and social sciences, ecology, clinical nursing and community organization be utilized. This course in community health nursing is concerned both with the health and the community as an interacting whole, and with the entire gamut of health care which embraces the promotion and preservation of the health of individuals, families and the community. (6 credits)

NURSING 401A
Pharmacology: The Nurse's Role

Prerequisite: Biology 300 or equivalent. This half course is designed to introduce graduate nurses to the basic concepts of drug pharmacokinetics as the basis for rational therapeutics. Thereafter, stressing the collaboration and understanding the professional nurse must provide in modern therapeutics the major drug classes will be reviewed. (3 credits)

NURSING 407B
Pharmacology: The Nurse's Role

Prerequisite: Nursing 401

This half course is the continuation of Community Nursing 401. It will continue the review of the major drug classes. (3 credits)

NURSING 440Z
Community Life: Family Structure and Health Care Delivery

This course concerns health problems of the family, the basic unit of community life. Prevention of disease, rehabilitation and continuity of care comprise the frame of reference for these health problems as they relate to marriage, pregnancy, childbirth, child-rearing, family planning and death. Clinical experiences and home visits as well as in-depth study of selected family health resources are planned. (6 credits)

NURSING 504Z
The Expanded Role of the Nurse

Prerequisites: Nursing 300-310-320-330-401-407-440-513 Registered nurse and practicing license. Topics include history-taking, observations, physical examination by system. Laboratory work will be done at local hospitals in cardiac, pulmonary, dermatology fields. (6 credits)

NURSING 513A/B
(Also given as Bio-PE 513 § 51.4.3 and Cose 513)
Methods and Techniques of Teaching Health

Lectures and practice in instruction of small and large groups. Emphasis will be on effective communication of health information to indivviduals and groups. Utilization of audio-visual aids in a variety of situations. (3 credits)

HEALTH EDUCATION 300
(Also given as Biol 300 § 51.3.3)
Fundamentals of Human Biology

A series of lectures designed to provide non-science students with a general survey of the fundamental principles of life, with emphasis on the structures and functions of man's nine systems. (6 credits)

HEALTH EDUCATION 301
School Health Programme

The prepared course of action taken by the school in the interest of the health of the school

child and school personnel. It includes health services, health instruction, and healthful school living. Emphasis will be directed toward the need for coordination of hospital, school, and community as suggested by Bill 65. (3 credits)

HEALTH EDUCATION 303A
(Also given as Bio-PE 451 § 51.4.3)
Structural Human Anatomy

The course is a study of gross and functional anatomy with major emphasis on the skeletal, muscular and nervous systems. (3 credits)

HEALTH EDUCATION 311B
(Also given as Bio-PE 455 § 51.4.3)
Systematic Human Anatomy

Prerequisite: Health Education 303 The course is a study of the organ systems of the human body with major emphasis on the circulatory, respiratory, digestive, excretory, reproductive, and endocrine systems. (3 credits)

HEALTH EDUCATION 351
Hunger in the Classroom: The Schools Role

Review of evidence indicating existence of malnutrition in schools in Quebec. Followed by discussion of observable effects of hunger and malnutrition in the classroom. Discussion of various programs and approaches by the school administration, the school board, the teachers, nurses, etc., taken to alleviate the problem. Topics of discussion will include: Action for school lunches — Malnutrition — learning and behaviour — Nutrition education program. (3 credits).

HEALTH EDUCATION 361
Community Health Information

Lectures will be given by members of the Montreal Area Medical Profession on subjects in the field of Human Development. Emphasis will be on topics of current interest in community life such as: contraception, venereal disease, drugs, sexuality and parent-child relations as they relate to the individual's participation at home and in the community. (3 credits).

HEALTH EDUCATION 370
School Health Services Seminar

Open to all members of pupil personnel services but directed especially to nurses working in educational settings. This seminar will explore the "team" approach to problems in current mental and physical health problems such as: drugs, venereal disease, diabetes, epilepsy, obesity, partially sighted, thoracic conditions, cardiac conditions, renal disorders, accidents, mental health and human sexual development. Teachers, Guidance Personnel, Mental Health Workers, Psychologists and Administrators will find this course of immediate interest. (6 credits).

HEALTH EDUCATION 372S
(Also given as Bio-PE 630 § 51.4.3)
Special Workshop Human Sexuality

Subject matter will vary from year to year, to take advantage of special interest in society. The 1975 courses will deal with "Psychological Concepts of Human Sexuality as they influence Family Planning and Sex Education": The study will explore variations in sexual patterning, therapy and counselling, biological, anthropological and ontological perspectives of sexuality. Open to educators, guidance counsellors, nurses, social workers, and psychologists. (6 credits).

HEALTH EDUCATION 391A
(Also given as French 307 § 51.12.3)
French Language for Community Health Personnel

Prerequisite: A basic ability to communicate in French. (Pre-University or equivalent course on lower intermediate level.) This course is designed to develop a working vocabulary at three different levels of communication: with French clients, other professionals, and government agencies. The practicum necessary for individuals to work in the numerous health settings now being developed in Quebec. (3 credits)

HEALTH EDUCATION 400Z
(Also given as Bio-PE 632 § 51.4.3)
Clinical Epidemiology and Bio-Statistics

An introductory course on the methods of measuring the distribution and determinants of disease frequency in Man. Measures of population health and health services utilization will be covered. Variability and the need of statistics will be stressed. (6 credits).

HEALTH EDUCATION 403B
Community Dental Health

This course is designed to enlighten the student of problems associated with dental care within the community. With the help of films and audio-visual aids, we will explore the realms of dentistry and consider the importance of the Dossier, Prevention and Rehabilitation. Our approach will permit the student to encourage open discussion and seminars during lecture hours. (3 credits)

HEALTH EDUCATION 405
Occupational Health Nursing

This course will deal with the relation of doctor and nurse, employer and employee; management and the medical department. Also the role of the nurse today and tomorrow in our rapidly changing society. Instruction will consist of lectures, group discussion and practical applications through field work and simulation. (3 credits).

HEALTH EDUCATION 421A
(Also given as Andr 361 § 121.4.3)
Personnel Interrelations

This course is designed to provide an orientation to the field of interpersonal relationship and human awareness, focusing particularly on relating to and working with other people. Concepts of personal growth and development will be highlighted. (3 credits).

HEALTH EDUCATION 430Z
Gerontology: Human Relations and the Aging Process

Health needs of the elderly, as defined by the World Health Organization, will be reviewed during the course in the context of the knowledge called from the psycho-biological and sociological fields of the process of aging, with a view of the role of the student as a member of the health care team. The guidance and counselling required with both the elderly patient and his family will be outlined. Practical skill and attitudes required to care for the aged and to educate him and his relatives will form an integral part of the course. (6 credits)

HEALTH EDUCATION 431
Medical Ethics

The course is team-taught by members of the Philosophy Department and is primarily intended for students in the Community Health Nursing Programme, with others admitted as far as feasible. Several meetings will give an overview of ethical principles on which particular topics can be considered. Because of the novel roles of personnel in community health settings, areas of students' ethics as health professionals, administrators and business persons will be included. Since students now come into more direct relation to legal control and governmental influence upon their actions, these require ethical consideration. Less isolated from community events, the health professionals require great awareness of their responsibility in research and experimentation. Attention is given to particular moral problems arising in dealing with families and other community primary groups, with children, with adolescents, adults and the aged. The relation of the professional to community institutions is also an area of ethical research in the course. (3 credits).

HEALTH EDUCATION 501B
Community Health Administration

This half course will deal with several aspects of business management. Among the topics covered will be theories of human motivation, power and authority, organizational structures and pro-

cedures, change and management systems. In addition, emphasis will be placed on pertinent financial areas which can be of help to the student in future work. These will include:
1) elementary financial analysis
2) the preparation, use and interpretation of budgets
3) the acquiring and management of funds.

The objective of the course will be to give the student an appreciation of the administrative tools of business. (3 credits).

HEALTH EDUCATION 503B
The Law and the Nurse

The series of lectures forming this course is designed to provide the nurse with a knowledge of her rights and responsibilities as a professional worker and as a member of the health service team operating in a community service setting. Jurisprudence of Canadian and Quebec law will be presented and various examples of professional liabilities under law will be reviewed. If time permits, medical law relating to the general liabilities of the medical profession will be added. (3 credits).

HEALTH EDUCATION 510Z
Community Mental Health & Social Problems

Lectures will provide basic knowledge on the needs and behaviour of mental and emotional deviants in childhood, adolescence, and adulthood. Interaction with school systems (special education) and hospitals will form part of the course work. Emphasis will be on the care of ambulatory patients through community clinics which will involve the family of the patient as well. (6 credits).

HEALTH EDUCATION 515B
(Also given as Andr 321 § 121.4.3)
Communications Media

Prerequisite: Health Education 513 or equivalent. This course is designed as a secondary course in methodology. It builds upon the principles established in Health Education 513*, and utilizes them in an electronic mode. In addition to the lectures, each student must make a presentation utilizing one or more of the media of the course. It is expected that hands-on experience will be provided with as many media as possible designed to place the student at ease in the use of electronic media. (3 credits).

COMMUNITY SERVICES 300Z
(Also given as Bio-PE 534 § 51.4.3 and Nurs 300)
Nutrition in the 70's

This course will study the influence of socio-economic and political systems on the nutritional status of the individual and the interrelationship between food habits and the cultural, social and psychological aspects of life. Topics will include diet related problems such as obesity, heart disease, faulty eating habits, malnutrition. Food budgeting for all levels of the socio-economic structure will be examined. (6 credits).

COMMUNITY SERVICES 310
Health Problems

Prerequisite: Biology 300. This course deals with areas selected for their epidemiological importance in understanding modern health problems. Topics will include the neurological basis of behaviour, problems arising from principles of heredity and their modern implications, ecology and pollution as related to our environment. The course will be geared to the interests of students and will vary from year to year. (6 credits).

COMMUNITY SERVICES 320
(Also given as Andr 420 § 121.4.3 Bio-PE 640 § 51.4.3 and Nurs 320)
Dynamics of Interviewing & Counselling

Prerequisite: Health Education 421 or equivalent. A laboratory course in which the student examines the dynamics of interviewing, models of human effectiveness, and theories of counselling, as well as the principles of the helping relationship. Counselling techniques in staff relations and surpervision will also be explored. The course demands a high level of observation, participation and involvement from each students. (6 credits)

COMMUNITY SERVICES 401 A/B
Drug Use and Abuse

The course is structured to introduce non-medical personnel to the modern concepts of drug therapeutics, and to discuss the consequences of use and abuse of drugs. The drug classifications will include steroids, antibiotics, minor and major psycho-tropics and the potential chronic abuse of drugs such as amphetamines and other stimulants, barbituarates and other sedatives, hallucinogens, minor transquilizers, opiate narcotics, alcohol and tobacco. (3 credits)

COMMUNITY SERVICES 408Z
(Also given as Bio-PE 642Z § 51.4.3)
Group Structure and the Role of the Community Worker

The course is developed to assist volunteers, interested citizens, street workers, and individuals with no formal health training, but working as part of a multidisciplinary team, to identify their roles in order to play a more effective part as a community worker. Assignments will be directed toward practical applications of field work to problem solving in a field of their choice: i.e. post-retirement, rehabilitation of drug addicts and alcoholics, single parents, etc. (6 credits)

COMMUNITY SERVICES 513A
(Also given as Bio-PE 513 § 51.4.3 and Nurs 513)
Methods and Techniques of Teaching Health

Lectures and practice in instruction of small and large groups. Emphasis will be on effective communication of health information to individuals and groups. Utilization of audio-visual aids in a variety of situations. (3 credits)

121.6 Library Science

Co-ordinator:
MELBA M. WILSON
Assistant Co-ordinator:
ANNE M. GALLER

121.6.1 PROGRAMMES

36 BA Major in Library Science

Year I
12 Libr 301A/B[3], 302A/B[3], 320A/B[3], 325A/B[3]
Year II
15 Libr 403A[3], 405B[3], 431A/B[3], 433A/B[3], 445A/B[3]
Year III
6 Libr 500 Level Elec
3 Libr 567A/B[3]

36 Certificate in Library Science

30 Libr 301A/B[3], 302A/B[3], 320A/B[3], 325A/B[3], 403A[3], 405A/B[3], 431A/B[3], 433A/B[3], 445A/B[3], 567A/B[3]
6 Libr 500 Level Elec
NOTE: 320 and 325 were listed as 310Z in the 1974/75 calendar (Loyola)

NOTE: Degree students must take Library 301 and 302 as prerequisites to all other Library courses. The thirty-six (36) credits pertaining to Library Science in the Certificate Programme must be completed in their entirety.

121.6.2 CERTIFICATE PROGRAMME IN LIBRARY SCIENCE

The Certificate Programme in Library Science is offered to meet the needs of students who may not wish to fulfill the requirements of a Bachelor of Arts degree. Full credit will be granted, if applicable, for courses taken at the Certificate level to those who wish to proceed towards a Bachelor of Arts degree, Major in Library Science. Credit for academic courses acquired at Concordia University or other recognized institutions will be considered for advance standing. Sixty-six (66) credits are required to complete the Certificate Programme, thirty-six (36) of which pertain directly to Library Science with thirty (30) credits of academic electives. The Library Science courses are accredited at University level and may be taken as electives by students in any discipline. Library Science students must complete all prerequisites as stated. All courses are open to students on an individual basis except Library 567 — *Practice Work*. This Course will be open to Certificate and Degree students only. All Library Science courses represent three (3) credit hours.

A minimum average of 65% is the basic academic requirement and students will be expected to retain this average in the prerequisites and throughout the Programme.
NOTE — All new applicants must be interviewed. Appointments for consultation may be made at the Co-ordinator's office, Vanier Library, Room V-318. All students must obtain course approval prior to their date of registration.

Library Science Mandatories
Library 301 — Principles of Library Service
Library 302 — The Organization of Library Services
Library 320 — Cataloguing and Classification Part I
Library 325 — Cataloguing and Classification Part II
Library 403 — Information Services
Library 405 — Bibliographic Searching
Library 431 — Data Processing and Automation
Library 433 — Technical Skills — Multi-Media Operations
Library 445 — Technical Skills — Collection Control
Library 567 — Practice Work

Library Science Electives
Library 535 — The Organization of Audio-visual Collections
Library 507 — Research Methodology
Library 511 — Library Service and Work with Children
Library 521 — Library Service and Work in Schools
Library 532 — Library Service and Work in the College and University

Library 541 — Library Service and Work in Business and Industry
Library 551 — Library Service and Work in the Public Library
Library 561 — Library Service and Work with the Young Adult
Library 565 — Archives and Records Management
Academic Electives — Five (5) full courses or equivalent. Certificate students must take Library 301 and 302 as prerequisites to all other Library courses.

Recommended Academic Electives
1. Acc 313/315 Introduction to Accounting.
2. Fr 317 French for Library Science.
3. Cose 320 Dynamics of Interviewing and Counselling.

121.6.3 COURSE DESCRIPTIONS

LIBRARY 301 A/B
Principles of Library Service

This course, which is the prerequisite to all others in the programme, attempts to lay the groundwork for the development of sound supportive staff in libraries. The effective use of the library, its basic tools and terminology, the skills and duties required of the library technician in the library organization and the objectives of library service in different types of libraries, will be introduced as they relate to the principles of librarianship required to provide service to users. Text: Bloomberg, Marty and Evans, G.E. *Introduction to Technical Services for Library Technicians*, 2d ed. (Littleton, Libraries Unlimited, 1974). (3 credits)

LIBRARY 302 A/B
The Organization of Library Services

Prerequisite: Library 301. Having acquired a basic knowledge of library resources, books, pamphlets, periodicals, documents and media; the processes required for their control, ordering, indexing, classification, cataloguing and circulation will be introduced and practised. Combined with 301, the student is prepared to consider a professional career in library science or further course work. Text: Bloomberg, Marty and Evans, G.E., *Introduction to Technical Services for Library Technicians*, 2d. ed. (Littleton, Libraries Unlimited, 1974) (3 credits)

LIBRARY 320 A
Cataloguing and Classification, Part I

Prerequisites: Library 301 and 302. This course is designed to give the student a basic knowledge of book and serial cataloguing. Coverage includes: Pre-cataloguing routines, the composition of catalogue cards, and descriptive cataloguing. Weekly laboratory sessions, assignments and readings are required. A knowledge of typing is essential. (3 credits.)

LIBRARY 325 A/B
Cataloguing and Classification, Part II

Prerequisites: Library 301, 302 and 320. This course is designed to give the student who possesses a thorough understanding of descriptive cataloguing a basic knowledge of and ability to assign classification numbers and subject headings. Sears and Library of Congress subject headings and the Dewey Decimal classification systems will be studied in depth; the Library of Congress classification system to a lesser extent. (3 credits.)

LIBRARY 403 A
Information Services

Prerequisites: Library 301 and 302. The course will examine the basic informational services given in all types of libraries relating to book and non-book materials. Standard general reference works will be studied (wiht the exception of bibliographies) to enable the student to work under a professional librarian in the Information Services Department of a library. Text: Katz, William., *Introduction to Reference Work, V. 1. Basic Information Sources* (New York, McGraw-Hill, 2d ed., 1974). (3 credits)

LIBRARY 405B
Bibliographic Searching

Prerequisites: Library 301, 302, 403. This course will provide a broad introduction to bibliographic searching. General and subject bibliographies will be studied to enable the student to use the library's resources effectively. Procedures relating to verifying and searching will be studied in detail as they relate to ordering, cataloguing, and inter-library loans. The mechanics of literature searching in any subject field will be introduced. The main emphasis in this course will be on the study of bibliographical sources to enable the student to work in a library as a bibliographical searcher. Text: Katz, William A., *Introduction to Reference Work, V. 1, Basic Information Sources*, 2d. ed. (New York, McGraw-Hill, 1974). (3 credits)

LIBRARY 431A/B
Data Processing and Automation

Prerequisites: Library 301 and 302. A basic introduction on the use of computers and systems in libraries. Students will receive instruction in flowcharting, the operation of keypunches and the preparation of documentation. Tours of an automated library, a data centre and an on-line terminal will provide an insight into the practical application of library automation and the routine technical activities performed by the library staff. No student prerequisite knowledge, or skill in mathematics, business administration or data processing is required. (3 credits)

LIBRARY 433A/B
Technical Skills — Multi-Media Operations

Prerequisites: Library 301 and 302. This course will be largely practical in nature, giving the student an opportunity to operate audio-visual machinery. He will handle the main types of filmstrips, filmslides, tape recorders, video and other media software found in today's modern library. Practical assignments will allow the student to create a variety of software such as slide tape presentations, transparencies, graphics and filmstrips. (3 credits)

LIBRARY 445A/B
Technical Skills — Collection Control

Prerequisites: Library 301 and 302. The course is designed to provide the student with a thorough understanding of library procedures. Acquisition processes of print and non-print materials will be examined, loan systems analyzed, and the maintenance and service of serial and government publications studied. This includes the techniques of filing, binding, microfilming and the organization and upkeep of the stacks. (3 credits)

LIBRARY 507A
Research Methodology

Prerequisites: 403 and 405. The aim of this course is to acquaint the student with the methods of research in any subject field. It is assumed that the student already has a good knowledge of reference sources, including a knowledge of general bibliographies. He will learn how to orient himself in relation to his research objectives, how to explore the relevant specific data, how to search for specific documents and how to classify these documents. Finally he will learn how to analyze, evaluate and present the result of his accumulated data in the proper form. He will be required to choose a research topic and write a paper on the method of collecting, organizing, evaluating and presenting data in relation to a chosen subject. Text: Batten, Thelma F. *Reasoning and Research, A Guide for Social Science Methods. (Boston, Little, Brown, 1971). (3 credits)*

LIBRARY 511A
Library Service and Work with Children

The major kinds of literature for children will be discussed to illustrate the desirable components to be encouraged for the development of reader interest and ability in the young child. The techniques used in the library such as story telling, book talks and graphics will be studied and practised and children's libraries visited and demonstrated. (3 credits)

LIBRARY 521A
Library Service and Work in Schools

Prerequisites: Library 301 and 302. The duties and responsibilities of the library assistant in the school, and those of the teacher-librarian, will be discussed including programmes for teaching the use of the library, methods for co-operating with teachers, assembling materials for instructional units, curriculum demands upon the library, and the effects of curriculum new trends in education upon the school library/resource centre. (3 credits)

LIBRARY 532A
Library Service and Work in the College and University

Prerequisites: Library 301 and 302. The organization, administration and functions of academic libraries will be studied with special references to curriculum oriented library services, together with services relating to large academic research libraries and library colleges. (3 credits)

LIBRARY 535A
The Organization of Audio-Visual Collections

Prerequisites: Library 320, 325, 433. This course will study audio-visual materials and the tools and aids for their acquisition, cataloguing and maintenance. Descriptive cataloguing and classification of the various audio-visual documents, such as tapes, cassettes, fiilmstrips, film loops, films, kits and the processing of these materials as well as their storage and circulation will be discussed. (3 credits)

LIBRARY 541B
Library Service and Work in Business and Industry

Prerequisites: Library 301 and 302. The role of the library related to its particular business or industry will be examined and the specific skills and devices employed to provide direct information to the users explored. Guest speakers will be invited to illustrate how the library becomes the central source of information within its organization. (3 credits)

LIBRARY 551B
Library Service and Work in the Public Library

With emphasis on the place of the supportive staff in the development of public libraries in Quebec, their objectives and services will be discussed. A team of public librarians will explore such topics as library legislation, financing, personnel and public relations with the student. (3 credits)

LIBRARY 561B
Library Service and Work with the Young Adult

The course will explore the major phenomena of the teenager's world, his lifestyle, problems and his responsibilities. Some of the skills needed to serve young adults in a library setting will be examined. Literature written especially for young adults, and some adult literature which is especially popular with, and suitable for, young people, will be studied. A pre-course reading list is available. (3 credits)

LIBRARY 565A/B
Archives and Records Management

The principles of records administration, of creation, use, maintenance and destruction will be discussed, including storage facilities, records classification, forms, reports control, protection of vital records, and micro-image systems. No previous experience in libraries or business is required. (3 credits)

LIBRARY 567A/B
Practice Work

Upon the completion of all other library courses, the student will be placed by the Co-ordinator to gain practical experience in a library system complementary to his interests. Under the supervision of a professional librarian, he will work throughout the system and submit a study of some aspect of the type of library represented. (3 credits)

131 Continuing Education

131.1 Centre for Continuing Education Loyola Campus

The Centre for Continuing Education on Loyola Campus was founded in the fall of 1973 and offers three sessions each academic year. These sessions commence roughly October 1st, February 1st and April 1st.

The Centre is, in a sense, an extension of the University. On the other hand however, its ideal is service to communities. Thus, unhampered by purely academic restrictions, the Centre strives to provide University level courses in another form; courses translated into immediate, practical and applied terms.

The Centre is administered by a Director, D. J. Potvin, and its policies are set by a Board of Advisers, a representative body made up of faculty members, laymen and administrators.

In 1974-75, five certificate programmes were introduced and these will be continued in the 1975-76 academic year.

These are:

Commercial Art
Journalism
French Conversation
Dress Designing & Pattern Making
Management

Along with the offerings in the above certificate programmes, individual courses designed to provide a specific need or service are offered: examples of this type of course are: The Law & You, The Moral Crisis of Our Times, Yoga, Painting, etc. The Centre will continue to endeavour to provide worthwhile courses to the community at large and invites suggestions for course offerings from citizens.

The Centre publishes a brochure outlining the offerings for each of its three yearly sessions: please call the Centre at 482-0320 (709) at the appropriate time for a copy of the current brochure.

131.2 Continuing Education Division/Sir George Williams Campus

Assistant Vice-Principal, Academic Continuing Education Division
JAMES R. McBRIDE

Director for Continuing Education in Business and Administration
KENNETH C. ETHERIDGE

Coordinator of Teacher Training and Certification
JOHN W. FISET

Coordinator of Continuing Education Music Programmes
MARCIA V. LOYND
Continuing Education
2140 Bishop
Montreal, Quebec
H3G 1M8
Tel: 879-2865

131.2.1 GENERAL INFORMATION

The university has introduced a new departure in university level programmes under the general heading of Continuing Education. Continuing Education is currently developing and administering courses which fall under one of two general categories: off-campus university credit programmes and non-credit programmes.

Off-Campus University Credit Programmes

University credit courses are offered off-campus during the winter and summer sessions. Students who take their courses through Continuing Education will receive their credits according to the regular university programmes in which they are enrolled.

The purpose of this programme is to attempt to meet the need of various segments of the public by offering courses in more convenient locations. Continuing Education is prepared to offer courses from the university programmes wherever there is a sufficient demand, provided qualified lecturers are available.

Individuals interested in establishing off-campus courses in their areas should contact the Coordinator of Teacher Training and Certification of Concordia University, Sir George Williams campus, at 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8.

Some of the credit courses offered by Continuing Education have not appeared in previous calendars because they were not approved prior to the deadline for calendar submissions. These course are listed, in their respective faculties, following departmental listings.

Admission

Admission to credit work through Continuing Education is the same as for regular admission to the university undergraduate programmes. For details refer to the section on Admission Regulations § 13. The courses offered through Continuing Education are oriented towards those individuals who wish to improve their qualifications. A specific effort has been made by Concordia University to meet the needs of teachers seeking courses for "perfectionnement". (A listing of specific courses and programmes of interest to teachers may be found beginning § 141 of this calendar.

Non-Credit Programmes

A wide variety of special programmes and courses is available through the Continuing Education Division for individuals who are not necessarily interested in following regular graduate or undergraduate programmes. For most of these, a certificate of achievement will be issued in the name of the University to students who successfully complete the required work. Course offerings are reviewed and supplemented frequently to ensure that they satisfy the changing needs for professional development in the community.

Hospitality Management Programme

This programme is presently made up of 13 separate courses. By successfully completing 10 of these, students become eligible for a Certificate in Hospitality Management.

The courses are designed to provide a thorough grounding in the basic body of administrative and managerial knowledge required by management personnel in the hotel and food services industries.

Small Group Special Interest Series

Courses in this series are informal and generally extend over a period of 8 weeks. They are designed to develop a particular skill or expand knowledge in a specific area. Among the courses offered in the series are ones on managing a small business, effective property management, and investment analysis.

Executive Development Seminars

These are one, two, or three-day seminars which provide intensive study of a special problem or issue affecting the business community. Offered from time to time throughout the year, they provide the means by which businessmen may up-date themselves in areas of vital concern. Similar programmes can also be arranged on a private basis for companies or industries desiring special training services.

Continuing Education also offers the following general interest programmes:

Complete Computer Electronics:

A self-study course in computer electronics offered in conjunction with the National Radio Institute and the Physics Department.

Cinema:

A variety of cinema courses are offered in conjunction with the Conservatory of Cinematographic Art.

Journalism, Public Relations and Advertising:

A series of courses designed as a practical programme in communications. Students are counselled with regard to their background and which course is best suited to them. All courses are taught by experienced practitioners who have worked in the media and related areas.

Photography:

This course, offered in conjunction with the Nikon Educational Services, offers students the opportunity to develop their photographic skills. The course includes visiting experienced, professional photographers, who lecture on specific topics.

Music:

A many-faceted music programme of instrumental, vocal, and ensemble study; workshops in contemporary, jazz, folk, rock and traditional music; instrument-building courses; and lectures and concerts. Staff is drawn from the Montreal Symphony Orchestra, outstanding television, radio and recording artists and leading independent teachers.

Flexible scheduling allows for private, shared or group instruction. Both credit and non-credit programs are available and courses are offered throughout the year.

Interested applicants should contact the Continuing Education Music Office at 2170 Bishop Street (2nd Floor) or call 879-8405 for further information about the year's programme.

141 Programmes and Courses of Particular Interest to Teachers

141.1 Introduction

Included in this section is a list of courses and programmes which may be of particular interest to teachers and which fall outside the offerings of the Department of Education of the Sir George Williams campus. Groups interested in the creation of courses, certificate or diploma programmes should contact the Coordinator of Teacher Training and Certification in Continuing Education at 879-8402. Continuing Education is prepared to offer courses off-campus from this section wherever there is sufficient demand, provided suitable lecturers are available.

Some of the credit courses offered by Continuing Education have not appeared in the previous calendar because they were not approved prior to the deadline for calendar submissions. A list of these courses may be found following the course listing in the relative departments. Teachers who have had problems obtaining scholarity from the Quebec Government for university level courses successfully completed at Concordia University should contact their local Teachers' Association.

141.2 Courses and Programmes

1—INDIVIDUAL COURSES OF INTEREST TO TEACHERS

ENGLISH N-237
Children's Literature
(6 credits) See § 41.14.2

TESL N-231
Modern English Grammar
(3 credits) See § 41.12.1

TESL N-241
Lanaguage Acquisition
(3 credits) See § 41.12.1

TESL N-351
History and Development of the English Language
(3 credits) See § 41.12.1

MUSIC N-421
Music in Education
(6 credits) See § 81.9.2

MATHEMATICS N-300
Number Systems
(6 credits) See § 91.9.4

MATHEMATICS N-301
Mappings
(6 credits) See § 91.9.4

THEATRE ARTS N-255
The Arts of Play Production
(6 credits) See § 81.11.2

THEATRE ARTS N-331
Creative Drama in the Schools
(6 credits) See § 81.11.2

2—SPECIFIC PROGRAMMES FOR THE TEACHING SECTOR

a-Certificate Programmes

(1) Certificate in the Teaching of English as a Second Language, Elementary Option, Secondary Option (30 credits) See § 41.10.3

(2) Certificat d'enseignement de l'anglais langue seconde au niveau élémentaire (programme intensif de perfectionnement) (30 credits) See § 41.10.2

(3) Certificate in Education (for Practising Teachers) (30 credits) See § 41.9

(4) Certificate in Mathematics for Teachers, Elementary School Level. (30 credits) See § 91.9.2

(5) Certificate in Mathematics for Teachers Junior Secondary School Level. (30 credits) See § 91.9.3*NOTE: A Certificate programme is one in which the courses offered are at the Bachelor's level.*

b-Diploma Programmes

(1) Diploma in Early Childhood Education. (33 credits) See Diploma Programmes Graduate Calendar

(2) Diploma in Instructional Technology (33 credits) See Diploma Programmes Graduate Calendar

(3) Diploma in Institutional Administration (33 credits) See Diploma Programme Graduate Calendar

(4) Diploma in the Teaching of Mathematics (33 credits) See Diploma Programmes Graduate Calendar

(5) Diploma in Art Education (33 credits) See Diploma Programmes Graduate Calendar

(6) Diploma in Ethics† (33 credits) See Diploma Programmes Graduate Calendar*NOTE: This programme is subject to approval by the University Senate. A Diploma programme is one in which the courses offered are at a level between the Bachelor's and Master's degree.*

c-Master's Degree Programmes

(1) Master in the Teaching of Mathematics (M.T.M.) (45 credits) See Graduate Programmes Graduate Calendar

(2) Master of Science in Biology Teaching Option (45 credits) See Graduate Programmes Graduate Calendar

(3) Master of Science in Chemistry (Teaching Option) (45 credits) See Graduate Programmes Graduate Calendar

(4) Master of Science in Physics (Option B) (45 credits) See Graduate Programmes Graduate Calendar

(5) Master of Arts in Art Education (45 credits) See Graduate Programmes Graduate Calendar

(6) Master of Fine Arts (90 credits) See Graduate Programmes Graduate Calendar

(7) Master of Arts in Educational Studies (45 credits) See Graduate Programmes Graduate Calendar

(8) Master of Arts in Educational Technology (90 credits) See Graduate Programmes Graduate Calendar

(9) Master of Arts in Philosophy (course 698 deals with Teaching of Philosophy) (45 credits) See Graduate Programmes Graduate Calendar

200 Equivalents Index

200.1 Sir George Williams Faculty of Arts — Equivalents Index

NOTE A The use of this note after certain course descriptions indicates, that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits. To find out the equivalents to the listed course refer to the index below.

NOTE B The use of this note after certain language course descriptions indicates, that for students for whom this is their mother tongue or whose schooling has been conducted in this language will not be admitted to this course.

NOTE C The use of this note after certain course descriptions indicates, that with the permission of the Department a student may take the listed course twice for credits, provided that a different subject is dealt with the second time.

Course Numbers	Equivalents 4 yr degree	
Interdisciplinary Studies		
N-201	201	Any 2 of Hum of Sc N-201, N-211, N-261, N-271
N-202	202	Any 2 of Hum of Sc N-202, N-211, N-261, N-271
N-221	221	Any 2 of Hum of Sc N-221, N-211, N-261, N-271
N-222	222	Any two of Hum of Sc N-211, N-222, N-261, N-271
N-241	241	Hum of Sc N-241, N-340
N-242	242	Hum of Sc N-242, N-340
N-312	212	Hum of Sc N-212, N-312
N-321	448	
N-333	231	
N-351	451	Hum of Sc N-451, Nat Sc N-231
N-401	471	Hum of Sc N-401, N-471
N-411	411	
N-412	412	Cdn St N-412
N-446	446	Hum of Sc N-446 Hist N-446
N-447	447	Hum of Sc N-447
N-472	472	
N-491	491	Urban St N-491
N-493	493	
N-495	495	Asian St N-491
N-496	496	Asian St N-492

HUMANITIES

Arabic

N-411	411	

Classics

N-212	212	011
N-241	241	041, 141
N-242	242	042, 142

English

N-211	211	
N-225	225	
N-226	219	N-219
N-227	227	
N-231	261	N-261
N-232	266	N-266
N-237	237	
N-241	221	N-221
N-244	244	
N-260	217	N-217
N-262	262	N-240
N-263	240	040, 241, 243 N-240
N-267	267	
N-281	281	
N-282	282	
N-283	283	
N-287	287	
N-311	411	N-411
N-318	280	N-280
N-333	431	N-431
N-334	434	N-434
N-335	435	N-435
N-336	436	N-436
N-337	437	N-437
N-343	246	
N-344	444	N-444
N-348	445	N-445
N-351	461	N-461
N-353	462	N-462
N-356	446	N-446
N-363	468	N-468
N-364	264	
N-365	268	
N-367	463	N-463
N-368	466	N-463
N-374	454	N-454
N-375	253	N-253
N-376	455	N-455
N-386	486	
N-425	418	N-418
N-426	419	N-419

Course Numbers	Equivalents 4 yr degree	
N-427	427	
N-430	475	N-475
N-440	440	
N-442	442	
N-443	443	
N-448	448	
N-449	449	
N-456	464	N-464
N-457	464	
N-459	459	
N-460	481	N-481
N-466	483	N-483
N-476	453	N-453
N-478	478	
N-479	479	
N-487	467	N-467
N-492	492	
N-493	493	
N-496	496	
N-497	497	

French

N-201	201	001, High School Fr
N-202	202	
N-203	203	
N-211	211	011, 212
N-214	214	014
N-222	222	022
N-241	241	
N-310	411	091
N-312	412	
N-313	413	
N-314	414	
N-321	221	021, 221
N-331	231	031
N-381	481	
N-410	410	
N-415	415	
N-417	417	
N-418	418	
N-420	420	
N-421	421	
N-422	422	
N-423	423	
N-424	424	
N-426	426	
N-427	427	
N-428	428	
N-429	429	
N-431	431	
N-432	432	
N-461	461	
N-462	462	
N-463	463	
N-465	465	
N-491	451	

German

N-210	211	N-215, 011, 110 015, 215
N-215	215	011, 015, N-210
N-241	212	012, 141
N-311	411	091, N-211
N-354	421	N-454
N-451	424	
N-452	422	
N-453	423	
N-455	451	
N-456	425	
N-457	426	
N-458	427	
N-459	428	

Greek

N-210	211	011, 110
N-241	212	012, 141
N-441	421	021
N-442	422	

Hebrew

N-210	211	023, 011, 110
N-241	212	012, 141
N-441	422	
N-442	424	
N-451	423	023

Italian

N-210	211	011, 110
N-221	221	021, 121
N-241	212	012
N-452	422	

Latin

N-210	201	001, High School Latin
N-240	211	011
N-341	421	021, N-241
N-441	422	
N-442	423	

Linguistics

N-221	211	011, 121
N-421	423	
N-431	421	
N-441	422	
N-490	490	
N-491	491	

Literature in Translation

N-350	450	
N-351	451	
N-352	452	
N-353	453	

Philosophy

N-210	211	011
N-211	212	012
N-221	253	053
N-231	241	041
N-271	271	071
N-273	273	073
N-301	422	
N-321	454	
N-361	261	061
N-365	465	
N-368	468	
N-369	413	
N-372	431	
N-374	432	
N-376	435	
N-378	436	
N-380	401	
N-396	471	N-496
N-398	472	
N-401	421	
N-403	423	
N-405	424	
N-407	407	
N-409	409	
N-421	452	
N-431	441	
N-493	491	
N-495	492	

Portuguese

Course Numbers	Equivalents 4 yr degree	
N-441	411	

Religion

N-201	201	N-215
N-211	211	
N-213	213	
N-301	251	051, N-251, N-351
N-302	252	052; N-252, N-352
N-311	411	N-411
N-312	412	N-412
N-313	413	N-413
N-325		N-425
N-326	426	N-426
N-327	427	N-427
N-328	428	N-428
N-329	329	
N-330	330	
N-331	331	
N-332	132, 332	
N-333	333	
N-334	334	
N-341	341	
N-361	441	
N-362	442	
N-363	463	261, 061, N-463
N-364	447	
N-401	401	
N-435	435	
N-443	443	
N-465	465	
N-491	448	
N-492	449	
N-493	493	
N-497	497	
N-498	498	

Russian

N-210	211	011, 015, 215, N-215
N-215	215	011, 015, N-210
N-241	212	012
N-311	411	091, N-231
N-351	421	N-451
N-452	422	
N-453	423	
N-454	454	
N-455	455	

Spanish

N-201	201	2 yrs High School,
N-202	202	N-210, 211, 011, 110
N-221	429	
N-222	222	
N-241	212	012
N-311	411	N-411
N-412	412	
N-451	451	422 prior to 1969-70
N-452	426, 427	
N-453	453	422 prior to 1969-70
N-454	423	
N-455	421	

SOCIAL SCIENCES

Anthropology

N-211	211	011, 111, 211 Soc 231
N-333	333	N-331, N-332
N-421	421	
N-425	434	
N-434	451	
N-458	435	
N-459	460	
N-461	461	
N-462	411	Soc 232
N-464	464	N-463
N-465	465	N-463
N-466	466	
N-467	467	
N-468	468	
N-494	486	N-495
N-495	487	
N-497	488	N-498
N-498	489	

Applied Social Science

N-212	212	
N-321	321	
N-351	251	
N-400	400	
N-413	413	
N-421	421	221
N-431	431	
N-441	441	
N-451	451	
N-452	452	
N-461	461	461
N-471	471	
N-472	472	
N-481	481	
N-482	482	
N-485	485	
N-486	486	

Education

N-201	212	
N-202	202	
N-210	210	
N-230	230	
N-261	261	
N-311	311	
N-315	315	
N-390	390	
N-391	391	
N-392	392	
N-393	393	
N-401	401	
N-402	402	
N-415	415	
N-416	455	
N-417	442	
N-421	421	Soc N-451
N-430	411	
N-441	431	211
N-442	422	
N-451	451	Soc N-451
N-453	453	
N-461	461	
N-465	459	
N-471	471	
N-480	490	
N-490	412	
N-491	413	
N-492	492	
N-493	493	
N-497	497	
N-498	498	

Geography

Course Numbers	Equivalents 4 yr degree	
N-211	211	011
N-260	260	060, 061; N-261 261 prior to 1973-74
N-261	261	061
N-271	231	232, 031
N-316	416	
N-321	448	
N-322	421	N-421
N-331	431	
N-341	441	
N-345	445	
N-350	458	
N-355	455	
N-357	457	
N-362	242	Stat course
N-363	243	Geog 242 Stat course
N-371	471	
N-372	472	
N-373	473	
N-391	461	
N-412	412	
N-422	422	
N-423	411	
N-434	434	
N-451	452	
N-457	460	
N-466	466	
N-475	475	N-475 or 475 prior to 1973-74
N-476	476	N-475, 475 prior to 1973-74
N-491	492	

Economics

N-209	209	011, N-211, 211, N-212, 013, 009, 109
N-210	210	011, N-211, 211, N-212, 013, 010, 110
N-221		N-330, 021, 130
N-270	281	Math N-203, N-205 or 005, or Econ 081
N-271	282	Math 415, 450, 451, Ec. 082
N-274	218	
N-304	431	N-404
N-305	432	N-405 or N-431 before 1969-70
N-311	411	091, 413
N-316	451	051, N-318
N-318	452	N-316
N-375	375	Intro Stat. N-275, 075, 275
N-411	412	
N-412	484	
N-413	485	
N-415	421	
N-418	453	
N-420	454	
N-422	461	
N-423	462	
N-426	426	
N-427	427	
N-428	472	271 or 471 prior to 1969-70
N-429	471	
N-430	420	
N-434	424	
N-438	428	
N-440	422	N-442, N-443
N-442	488	N-440
N-443	489	N-440
N-446	423	
N-460	445	
N-464	444	
N-465	443	
N-468	447	
N-470	480	
N-471	481	
N-476	482	
N-477	483	
N-490	491	
N-491	492	
N-493	493	
N-494	494	

History

N-210	213	013, 110
N-211	211	011, 111
N-221	221	021, 121
N-251	251	051, 151
N-261	261	061, 161
N-321	423	120
N-322	424	024, 122
N-323	422	123
N-326	426	324
N-328		128
N-331	412	131
N-332	414	132
N-333	415	133
N-335	442	135
N-336	444	136
N-337	413	137
N-341	441	141
N-345	431	145
N-346	416	334, 016, 146
N-347	418	147
N-351	453	150
N-352	459	457, 458, 152
N-354	456	154
N-355	455	155
N-358	452	158
N-361	461	160
N-362	462	162
N-363	463	163
N-365	481	165
N-390	472	
N-421	421	
N-431	434	
N-445	345	142
	445	
N-446	446	N-446
N-447	447	
N-451	451	
N-461	463	
N-490	474	
N-491	473	
N-492	475	
N-493	493	

Political Science

N-231	291	091
N-240	211	011
N-270	421	021
N-311	431	031
N-320	420	N-210, N-220, 210, 010
N-321	425	
N-330	251	051
N-333	441	
N-334	434	
N-335	435	
N-350	450	N-354, 414
N-351	412	N-451, 416 or 417 prior to 1969-70

Course Numbers	Equivalents 4 yr degree	
N-353	453	N-352 or 413
N-355	455	N-356
N-381	423	N-481
N-413	432	
N-415	433	
N-436	451	
N-437	452	
N-458	411	
N-465	465	
N-466	466	
N-472	472	
N-483	422	221
N-485	485	
N-491	491	
Psychology		
N-211	211	101, 201, 011
N-212	212	421, N-421, 422 N-422
N-213	213	421, N-421, 422 N-422
N-214	251	
N-215	252	
N-241	241	Stat course
N-242	242	Stat course
N-271	271	273
N-273	273	271
N-302	436	
N-303	435	
N-304	440	441, N-442
N-305	441	441, N-442
N-309	403, 303	
N-375	275	N-275
N-402	450	
N-403	449	
N-404	404	
N-405	405	
N-412	412	
N-413	413	
N-421	421	
N-422	422	
N-428	427	
N-432	432	431
N-434	434	433, 431 prior to 1968-69
N-438	438	
N-442	442	441, Soc N-420
N-452	452	451
N-454	454	
N-461	461	
N-462	462	
N-471	471	
N-472	472	
N-481	481	221
N-482	482	223
N-491	491	
N-492	492	
N-493	493	
N-494	494	

Course Numbers	Equivalents 4 yr degree	
Sociology		
N-210	212	011, 211, 111
N-241	241	Stat course
N-411	411	
N-412	402	N-495, 487
N-420	425	N-442, 442
N-421	433	
N-422	495	
N-424	432	
N-430	423	
N-431	424	
N-432	428	
N-440	404	
N-441	441	
N-442	442	
N-443	422	
N-444	447	
N-445	443	
N-446	444	
N-447	427	
N-448	461	
N-449	462	N-453, 462
N-450	496	
N-452	449	
N-454	465	
N-455	497	
N-456	493	
N-457	457	
N-458	458	
N-470	406	N-499, 409, 486
N-471	407	N-497, 488
N-481	491	
N-494	486	
N-495	487	
N-496	408	
N-497	488	
N-498	489	
N-499	409	

200.2 Faculty of Commerce and Administration Equivalents Index

NOTE A The use of this note after certain course descriptions indicates, that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits. To find out the equivalents to the listed course refer to the index below.

NOTE C The use of this note after certain course descriptions indicates, that with the permission of the Department a student may take the listed course twice for credits, provided that a different subject is dealt with the second time.

Course Numbers	Old SGW Numbers	4 yr degree	Old Loyola Numbers
Accountancy			
213	N-213	211	313A/B, 300
214	N-214	211	315B, 300
217			411A/B, 400, 402
218	N-216	Man 411, Fin 416	413B, 402
220 (120)			320Z
221 (121)			320Z
323	N-313	411	415B, 400
324			417A, 498
325	N-314	412	419B, 408
403			503A
407			507B
414			511B
421	N-421		
422	N-422		
425	N-215	Man 411,	
	N-315	Fin 416	
429			517A, 508
432	N-432	431	519B, 508
433	N-433	431	
441	N-441	Com Law 441	513A/B, 504
442			515B, 504
451	N-451		(Computer Auditing New Name)
461	N-461		509A
470			560Z
471			560Z
Administration			
201 (101)	N-201		312Z
202 (102)	N-202		312Z
350			515B
Finance			
215	N-215	315, 413	407A/B, 408
314	N-314	413	409B, 408
315	N-315	413	
417	N-417		
418	N-418		
430	N-430	424	
431	N-431	424	
440	N-440	423, 426	541B
441	N-441	423, 426	
452	N-450	423, 427	530Z
453	N-450	423	530Z
455	N-455	427	
460	N-460	429	
461	N-461	429	
Management			
211	N-211	Com Law 211	
213	N-213	Psyc 011, 211	
214	M-214	Soc 211	
215	N-215		
313			413A/B, 414
315			415B, 414
340	N-340	430	
341	N-341	430	
345	N-345	421	470Z
346	N-346	421	470Z
368	N-368	451	503B
369	N-369	451	
401			501A
405			505B
407			507A
409			509B
460	N-460	453	511B
461	N-461	453	
462	N-462	432	
463	N-463	432	
464	N-464	433	
465	N-465	433	
466	N-466	452	
467	N-467	452	
475	N-475	211	502Z
476	N-476	211	502Z
499			560Z
Marketing			
213	N-213	211, 411, 421	419A/B, 320
350	N-350	211, 411, 421	421B, 320
352	N-352	431	
402	N-402	412, 451	551B
403	N-403	431	

Course Numbers	Old SGW Numbers	4 yr degree	Old Loyola Numbers
452	N-342	412, 451	
453	N-453	221, 222, 431	523B
454	N-454	414, 461	521A
462	N-462		
463	N-463	481	
464	N-464		
485	N-485		
490	N-490		
491	N-491		

Quantitative Methods

208 (108)			300Z, Math 310
209 (109)			300Z, Math 310
243	N-243	242, Math 241, Stat 242	308Z
244	N-244	242, Stat 242	308Z
313	N-313	411, QA 411	518Z
314	N-314	411, QA 411	518Z
353	N-353	Math 415	
354	N-354	Math 415	
415	N-415	412	
423	N-423	421	
424	N-424	421	
425	N-425	422	
426	N-426	422	
433	N-433		
445	N-445	442	
446	N-446	442	

200.3 Faculty of Fine Arts Equivalents Index

NOTE A The use of this note after certain course descriptions indicates, that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits. To find out the equivalents to the listed course refer to the index below.

NOTE C The use of this note after certain course descriptions indicates, that with the permission of the Department a student may take the listed course twice for credits, provided that a different subject is dealt with the second time.

Course Numbers	Old SGW Numbers	4 yr degree	Old Loyola Numbers
Art History			Art
N-240			390
N-444			491
N-342			493, 494, 495
N-343			496
N-441			492
N-341			499
Art	Art	Art	Studio
N-200	N-331		300
	N-332		301
N-430	N-430	452	
N-432	N-432		
N-434	N-433	433	
	N-434		
N-436	N-435		
	N-436		
N-460	N-460	431	
N-461	N-461	461	
Art Education			
N-200	N-251	251	400
			401
N-400	N-450	450	
Design			
N-201	N-370	490	320
N-301	N-470		
Drawing			
N-200	N-210		310
			311
N-300	N-400	410	
N-400	N-401		
Graphic Design	Art	Art	
N-200	N-371	494	
	N-372		
N-201	N-471	495	
N-300	N-373	492	
	N-374		
N-301	N-472	495	
N-400	N-473	493	
	N-474		
N-450	N-475	491	
	N-476		
Painting			Studio
N-200	N-211		331
	N-311		434
		411	
N-300	N-312		435
	N-411		536
		412	
N-400	N-412		
	N-413		
		414	
N-450	N-414		
Photography			
N-201	N-338		
N-301	N-438		
Printmaking			
N-200	N-381	281	451
	N-382		
N-300	N-481	481	
	N-482		
N-400	N-483	482	
	N-484		
Sculpture			
N-200	N-321	221	340
	N-322		441
N-300	N-421	421	542
	N-422		
N-400	N-423	422	
	N-424		

Course Numbers	Old SGW Numbers
Theatre Arts	
N-212	Fine Arts 212
	Drama 212
N-247	Fine Arts 247
	Theatre Arts 047
	Drama 247
N-255	Fine Arts 252
	Drama 252
N-355	Drama 455
N-421	Drama 421
N-455	Drama 456

Course Numbers	Equivalents 4 yr degree	MSQP	CEGEP
Music			
N-231	231	131	
N-232	232	132	
N-233	233	133	033
N-235	234	135	034
N-245	245	145	045
N-343	443	143	
N-345	445	146	
Cinema			
N-211	257		057
N-212	258		058

200.4 Sir George Williams Faculty of Science Equivalents Index

NOTE A **The use of this note after certain course descriptions indicates, that there exists an equivalent course and that students who have the equivalent course may not take the listed course for credits. To find out the equivalents to the listed course refer to the index below.**

NOTE C **The use of this note after certain course descriptions indicates, that with the permission of the Department a student may take the listed course twice for credits, provided that a different subject is dealt with the second time.**

Course Numbers	Equivalents 4 yr degree	
Biology		
N-201	251	101, CEGEP 301
N-202	252	102, CEGEP 401
N-203	253	Zoo N-210, N-211
N-204	254	
N-213	453	
N-224	444	
N-241	241	
N-253	428	N-250, Bot 414
N-254	429	N-250, Bot 414
N-255	242	
N-314	454	
N-343	445	N-342, 442
N-344	446	N-342, 442
N-360	460	
N-372	481	N-371, 481
N-373	484	N-371, 481
N-380	482	
N-381	483	
N-416	456	
N-433	443	
N-434	434	
N-435	435	
N-445	447	
N-446	448	
N-490	491	
Botany		
N-210	430	
N-213	421	
N-215	434	411
N-216	435	N-212, 415
N-231	410	N-230, 412
N-311		411
N-313	423	N-312, 422
N-320	431	413
N-360	432	413
N-422	418	
Zoology		
N-212		N-210, 421
N-213	424	
N-214	425	
N-215	422	N-211, 422
N-313	453	N-316, 453
N-320	431	
N-331	473	N-330
N-332	474	N-330
N-361	462	
N-422	432	N-421, 432
Chemistry		
N-201	101	101, CEGEP 101
N-202	102	102, CEGEP 201
N-211	412	
N-213	413	
N-221	411	
N-222		N-221
N-223		N-221
N-231	421	
N-233	433	N-231
N-241	431	
N-281	461	
N-301	401	
N-311	417	
N-321	415	N-323
N-322	418	N-321
N-323	419	N-321
N-331	427	
N-336	471	
N-337	473	
N-338	472	
N-341	432	
N-342	436	N-341
N-343	437	N-341
N-346	474	
N-350		N-353
N-351	440	
N-352	449	N-351
N-353	490	
N-354	499	N-353
N-371	441	
N-382	462	
N-383	463	
N-431	428	
N-441	433	N-442, N-433
N-442	434	N-441
N-443	435	N-441
N-451	491	N-452, N-453
N-452	492	N-451
N-453	493	N-451

Course Numbers	Equivalents 4 yr degree	
N-461	416	
N-471	443	
N-472	444	
N-491	450	
Geology		
N-215	211, 213, 214, 215	N-211, N-213, N-214, 115, CEGEP 901, CE N-431
N-231	221	131
N-232	222	
N-245	245	
N-322	424	N-321, 212, 012
N-323	425	N-321, 212, 012
N-342	426	N-341, 411
N-346	446	N-348, 428, N-351 421
N-347	447	N-348, 428, N-351, 421
N-349	429	N-351, 421
N-352	422	
N-353	423	
N-370	470	Chem N-211
N-420	223	
N-421	430	
N-455	455	N-460, 440
N-456	456	N-460, 440
N-461	441	
N-462	442	
Mathematics		
N-200		100
N-201		223, 101
N-202	213	102, CEGEP 101
N-203	451	103, CEGEP 103
N-204	431	104, CEGEP 105
N-205	451	105, CEGEP 203
N-206	411	N-281, 106
N-207		N-241, 107
N-208		N-202
N-209		N-203
N-210		
N-241	440	
N-270	452	N-271, N-372, N-373
N-290		N-292
N-291		N-292
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